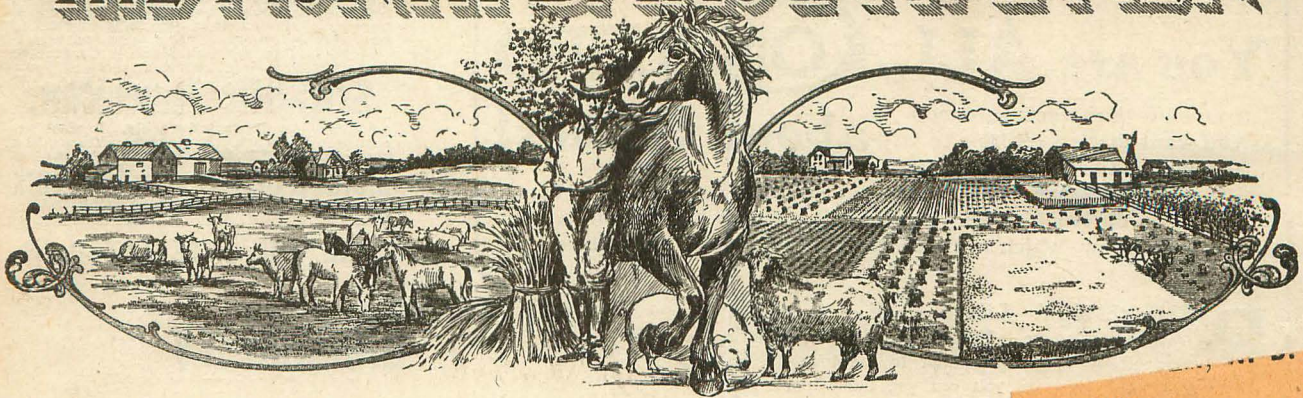


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THE NORTH DAKOTA FARMER



"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Alex Alin

Vol. 11, No 7
LISBON, N. D.

JANUARY 15, 1910

50 Cents a Year
FARGO, N. D.



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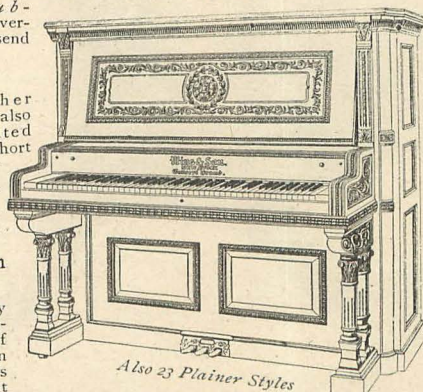
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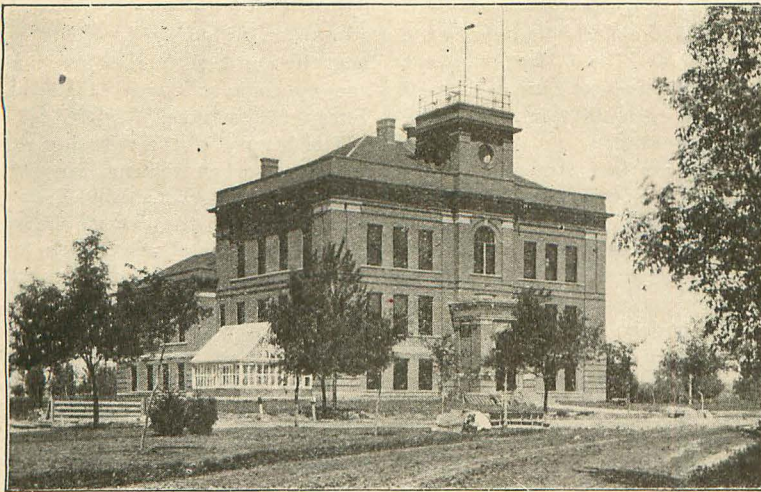
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THE NORTH DAKOTA FARMER

Vol. 11, No. 7

LISBON and FARGO, N. D., JANUARY 15, 1910

50 Cents a Year



Chemical Building of the Agricultural College recently destroyed by fire.

OF GENERAL INTEREST

INTENSIVE FARMING

By J. H. Worst

The whole scheme of agricultural education, whether promulgated from the college class room or from the farmers' institute platform, is more or less related to intensive farming. The acreage of our country suitable for cultivation will soon all be in private hands, and as population increases the farms must of necessity be reduced in size. The products of the farms must, however, increase in volume in order to meet the demands of an ever increasing population. In other words, each acre must produce more and more as the pressure of population makes larger demands upon it. That this can be done, no one familiar with agricultural possibilities will deny. But to do this our methods of farming must change. The small farm, well tilled, will produce proportionally more than the large farm indifferently cultivated. Greater care in the preparation and selection of seed grain also will increase the yield. Growing clover and the application of barnyard manure to the land will add greatly

to its productiveness, while in many other ways the soil can be made to yield many fold more per acre than under our present system of extensive agriculture.

ERA OF SMALL FARMS

The era of small farms will usher in these improvements, or, rather, make them possible, and the greater prosperity arising from intensive cultivation will insure its general practice. The time is not far distant when a quarter section of land will be considered a fair-sized farm. Properly managed, it will insure every reasonable home comfort and will enable its proprietor to make money, besides.

The average farmer wishes to expend a certain amount of labor and capital upon his farm. The small farm will not necessarily curb his energies. He can still employ his labor and money on the smaller area with equal or better results than where they are spread over a large area. It may not be more difficult to raise 40 bushels of wheat per acre on 80 acres than to raise 12 bushels per acre on 266 acres, provided the same amount of labor and capital be employed in either venture. The 80 acres yielding 40 bush-

els per acre would represent intensive farming and would be vastly more reliable, one year with another, than the 266-acre farm cultivated under the extensive system. Moreover, the small farm would tend to increase in yield rather than decrease, while the larger farm would tend in the opposite direction. The reason for this assumption is not far to seek. The system employed represents the difference between a farmer and a miner. The farmer anticipates a continuous performance and makes provision for it. The miner simply exhausts the soil, then goes prospecting elsewhere.

What has been done

Arnold Martin, of Nebraska, says that 20 acres are enough for one family and he backs up his assertion by making, not only a living but good money, off of 20 acres of land that was, previous to his possession of it, considered to be of little value. He simply put on that 20-acre farm as much thought and work as many another farmer puts on 160 acres or more, and gets as much out of his little farm as they do out of their larger farms. He says: "Twenty acres was all I wanted. That's enough land, if farmed rightly, for any man; 320 acres is a misfortune and 640 acres is a downright calamity."

Perhaps Martin is right. At all events he is prospering while many a larger farmer has hard sledding. He paid only \$12.50 for his land when adjacent lands were held at \$50. and \$75 per acre, which is sufficient proof of its undesirability. He improved it. Now he has a standing offer of \$125 per acre for his land but will not sell. Why should he? He not only maintains his family, but saves \$1000 annually. He is satisfied to let well enough alone.

Small Farms of Europe

Thirty-nine per cent of the farms of France are five acres or less, in extent. Forty acres is a big farm in Holland or Belgium, while ten acres comes nearer the average. But over there the land is well fed and, in consequence, produces enormously. Nothing is wasted, which adds greatly to profitable farming.

The Island of Jersey, altho not specially favorable to agriculture, supports a

farming population of over 1200 inhabitants to the square mile. The value of Jersey lands ranges from \$1500 to \$2000 per acre, but the farmers raise products to the average annual value of \$250 per acre.

Not Yet

It is not necessary for North Dakota farmers to follow the exceedingly intensive system of agriculture, nor the rigid frugality that is practiced in countries where land is scarce and high-priced and where the pressure of population is very great. Neither is it consistent to practice reckless prodigality with our minerals, timber, oil and soil fertility, just because we have them in superabundance. The time to save is while we have something to save.

Intensive agriculture is economic agriculture. The glory of North Dakota will come from her farms. Her crowning glory will consist in many small, fertile, well-tilled, highly productive farms, each the center of culture and refinement, but, nevertheless, the seat of intelligent manual activity as well.

THE PRICE WE PAY FOR BAD ROADS

Hunger and Illiteracy Stalk Along our Ill-kept Highways

By Agnes C. Laut

Do good roads concern you? If you are one of the 30,000,000 people who live on farms in the United States, it is a fairly safe guess that you know something about bad roads, even if you do not know and have never chanced to cross the seven per cent of improved roads of the total two million miles of highway in the United States.

But if you are a city dweller, whose use of the highway consists chiefly of the street railway, does the good-roads movement concern you? That question is best answered by asking another. When the price of wheat goes up from 70 cents to \$1.30 a bushel, and the price of potatoes from 50 cents to \$1.25, and the price of bread from 6 to 10 cents, and the price of flour from \$4.50 to \$7.50 a barrel—do those facts concern you? If they do, then you are vitally interested in good roads? Take wheat, for instance! Do you know why it is possible to corner the market in wheat? First of all, because wheat is scarce—the demand growing faster than supply; but secondarily, because, owing to the condition of the roads, it is possible for speculators to get possession of the whole year's crop of wheat. The West is the great granary of the wheat supply today; and in the West wheat must be *rushed to market* in the clear, dry autumn days when the prairie roads are hard as flint. If the farmer held his wheat over, past the dry weather, in the

most of counties he simply could not deliver during late autumn rains or early spring break-up when roads are a churn of mud. The result is, for three months after each crop, there is a glut of wheat at elevator, railroad, water-front. A large proportion of the crop goes in storage. These storage charges amount in a grain center like Chicago to as much as nine cents a bushel in a year. On Minnesota's wheat crop, storage charges mount up to \$5,000,000; on the two Dakotas, to twice as much, and so for every grain area on the continent. The farmer does not pay those storage charges at water-front. The speculator does not—he adds those charges to the selling price; and the man who pays is the buyer—you, Mr. Town Man, who eat dear bread all because some mud road back in a hoosier state has not been graded up properly.

As a matter of fact, America's country roads are so notoriously bad that it costs more to haul a ton of wheat from farm to market than to ship that ton from New York to Liverpool. America's country roads are so bad that it costs the American farmer 23 cents to haul a ton, when it costs the English or the Belgian or the French or the German farmer only from 7 to 9 cents for the same haul. You, Mr. Town Man, and you, Mr. Farmer, pay for the unnecessary waste of those bad roads, the town man by extra cost of what he eats, the farmer by lessened profits on what he sells. The same reason explains why the town man pays \$1.25 in spring for potatoes which cost from 50 to 75 cents in the autumn.

If you want to know what bad roads cost the country as a whole, keep in mind that American farmers are paying 23 cents a ton for hauling, when European farmers are paying from 7 to 9 cents. Now, the Interstate Commerce report shows that the railroads yearly haul 265,000,000 tons of farm produce, and that the average haul from farm to market for the whole country is nine and a fraction miles. Put the cost of hauling at a round \$2 a ton for the nine miles, and you have the cost of hauling farm produce at a round half-billion dollars a year. Half that cost is waste, solely owing to bad roads.

Look squarely at the facts!

Two hundred and fifty million dollars a year wasted on bad roads, which the farmer and consumer jointly pay!

The charge to haul wheat from New York to Liverpool, 3,100 miles, is 3.5 cents per bushel. The charge to haul a bushel of wheat from farm to market, 9.4 miles, is 5.11 cents! The storage on wheat at water-fronts, 9 cents a bushel a year. Do good roads concern you?

Total up the whole cost of bad roads, the waste on haul, the storage at water-fronts, the extra price paid for food, ow-

ing to scant markets in spring—and you have an expense bill of a billion dollars a year against bad roads, or, on a basis of 80,000,000 population, a tax of \$12.50 a year, which every man, woman and child pays for bad roads.

The results of bad roads are yearly tolls of \$12.50 against every person who eats farm produce. That yearly waste would build 200,000 miles of A1 macadam roads every year; or in ten years would turn every country road into such a highway as the Romans' famous Appian Way, basing the cost at the very highest average of \$5,000 a mile. The macadam roads sometimes exceed that figure, owing to special difficulties of swamp or bridge work, on easy grades near the source of the rock bed, the average has come as low as \$2,000; in New Jersey, for instance.

The beauty of the relentless scheme of things is when we mend our ways—in this case, mend our roads—Nature not only wipes out the deficit, she puts a plus to the account where there used to be a minus. Supposing of the 2,000,000 miles of roads in the United States, all were improved instead of only seven per cent, what would be the result to farmer and consumer? First of all, the big deficit of waste on haul, on storage, on cornered prices—wiped out! The minus goes off the national slate and the plus comes on.

Good Roads Reduce Distance

The good road moves the remotest farm right next to the market. A farm twenty miles from the market on an all-the-year-round good road is nearer market than a farm seven miles away on a bad road. Truck farmers in New Jersey and Long Island can haul their produce to market, thirty miles, cheaper than they can ship by railroad; and that produce nets, according to well-known averages, as follows:

Fruit, \$80 per acre; flowers, \$2,000 per acre; corn, \$8 per acre; wheat, \$7 per acre; oats, \$7 per acre; vegetables, \$42 per acre.

Out in the Dakotas and Minnesota and Manitoba they haul their product thirty and forty miles; but they can haul it only when the roads are dry in the early fall; and at that season the price is lowest. The farmer along the good road can command the best price by hauling only when the price is best; and he can also raise the produce that gives biggest net returns. If you would learn why a whole family can live and live well off an acre in Holland and Belgium and France, when a family often fails to live well off a hundred and sixty acres in America, study that table of farm averages in relation to the good roads.

One can hear the snort of derision from a skeptic as he asks if the inference is with good roads your Dakota farmer grow flowers at \$2,000 an acre! No, it

is not; but here is the inference: With good roads, your Dakota farmer—who under present conditions drives hub-deep in gumbo mud during spring—could market his crop when prices ruled highest. Instead of selling his wheat at 70 and 80 cents in the fall, he could sell it at \$1 during the winter and in the spring. (Prices of \$1.30 and \$1.50, which Mr. Hill predicts, I eliminate because the cornering which brings such prices is largely the result of the bad roads, which throw an entire season's crop into the hands of the speculators.) An additional price of even 25 cents a bushel would mean \$15,000,000 more in the pockets of the Minnesota farmers, a similar amount to the farmers of the Dakotas, and to the wheat farmers of the Pacific Coast. Purely as an investment, the wheat farming states should wake up; for only one of them has entered on the good-roads movement with vigor.

With good roads you would not need to buy your vegetables in the country. In many parts of New England small fruits and vegetables are bought from dealers who send to New York. New York gets them from New Jersey and Delaware and the South. Your New York farmer does not raise vegetables in quantities because until recently roads did not permit him to market such a perishable product in quantities. This holds good of the very place where I live in New England. The same condition exists in the cow country, and the grain country. Potatoes and onions your Dakota farmer can market in quantities. Therefore he raises them; but because bad roads cut him off from the market half the year he does not raise the more perishable vegetables. Vegetables he buys from California at fancy prices—another tax for bad roads. In fact, owing to bad roads, there have been seasons when New Yorkers were paying \$1 a bushel for their potatoes and Western farmers were glad to sell them at 15 cents for pig feed and starch.

With access to market and best ruling prices, net returns increase and farm lands jump in value. It is an actual fact, wherever good roads have gone, land has increased in value from \$2 to \$9 an acre. In Jackson County, Alabama, a bond issue of \$250,000 built 125 miles of macadam road. The selling price of land was from \$6 to \$15 before the road was built. On the completion, land values went up from \$15 to \$25. In Bradley County, Tennessee, land values advanced from \$9 to \$15 and \$30.

Another curious but perfectly natural result of good roads is population. Buyers buy more readily when they can market easily. Take these figures.

In twenty-five counties, where there was only 1.5 per cent of improved roads, the population decreased in the ten

years from 1890 to 1900 a total of 77,800.

In twenty-five counties, where 40 per cent of the roads were improved, the population increased in the same period 778,000.

The effect of good roads on school attendance needs no proof. In the five states having the best roads the average attendance is 77 per cent of enrollment. In the five states having the fewest good roads the attendance averages only 59 per cent.

With these figures on schools, it is not surprising to find that ignorance and bad roads go together. In the four bad-roads states, with a total population of 7,000,000, are 375,000 men and women, white and native born, who can neither read nor write. In four good-roads states, with a population of 6,000,000, are only 20,000 illiterates.

How the Movement Began

The movement for good roads is so recent that it need not be retailed here. When colonists first came to America, the roads followed buffalo trails and Indian wilderness paths. As farms became fenced, roads ran along between boundaries without regard to the shortest distance or grade; and these were kept in order (or disorder) by statute labor—farmers turning out for a day once a year for a road picnic, filling in holes that ought to have been filled in months previously, tinkering and trifling away time with no special director. The results were what might have been expected. Men do not employ blacksmiths as doctors; and why should farmers be supposed to possess the technical knowledge of an engineer? During various wars, two or three good roads were hacked thru the wilderness across country, from New York up to Boston along the old post road, from the Cumberland Mountains west to St. Louis, from Virginia up thru Pennsylvania to Pittsburg, and when emigration began to roll Westward, from St. Louis to Oregon. With these exceptions, the highways of the United States were a system of pig-track trails.

Then came the great railroad building era down to 1880, when public roads were forgotten in the expectation that railroads would supplant them; but as population grew, the necessity for roads to link farm with market became daily more insistent. Kentucky and Pennsylvania had long had toll roads; but these were unsatisfactory; and about 1891 New Jersey began the State-aid system, followed by Massachusetts, Vermont, Connecticut, New York, Maine and Rhode Island, until more than twenty states had special highway commissions. Illinois, Virginia and Alabama have tried most successfully the convict labor on the roads. There is much to commend convict labor. It removes the convict problem from the disrepute of

contract slavery in the South. It cuts the cost of good-roads labor exactly in half. It gives definite return to the state for care of law-breakers, and wholesome employment to convicts without competing in the labor market against legitimate labor.

Oil Roads in California

Counties in California are undertaking good roads as a direct investment. Tourist travel brings hundreds of millions of dollars to favored counties; and the favored counties are not only building good roads, but building dustless roads. This is a hard problem where motor traffic is heavy. The principle of the macadam road is an underbedding of small wedged stones held together by the binding of the dust ground off by the wheels of vehicles and packed into the interstices like cement. This was all right for the ordinary vehicle with iron tires to grind off the grit. But the motors came along with heavy rubber tires, which grind off nothing, but

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whirl the dust away from the road into the field and suck the stones up out of place from sheer speed. To overcome this, California is using bituminous oils as road-binders. These make an absolutely dustless road.

In response to the tremendous demand for good roads, the National Government in 1893 formed a Road Bureau, which gives free engineering services on road-building in every part of the country. This bureau has grown into an organization which has assisted in the construction of two hundred roads, sent its engineers to thirty-four different states, tested twenty-eight hundred different samples of road material, and demonstrated the material suitable for good roads in every state.

A Substitute for Macadam

One example of the Road Bureau's work will show its usefulness. Roads for the states of sticky gumbo soil have been almost a hopeless problem. There is a whole belt of such states along the south, and there is another belt along the Missouri, where wheels sink hub-deep and horses flounder to death in a mire more treacherous than quicksand. The Road Bureau discovered, from many practical tests, that by burning gumbo soil, a road-bed compact as macadam could be obtained at half the cost of macadam; or at practically only the cost of labor and of fuel to do the burning. There is no longer any excuse for lethargy in road-building thru the gumbo states.

You are convinced, are you not, that good roads put money in your pocket, wherever you live or wherever your business?

The United States, tho blessed with the most fertile soil and favorable climate in the world, produces an annual average yield of less than fourteen bushels of wheat per acre, while England produces more than thirty-two, Germany twenty-eight, and the Netherlands thirty-four.

PRESERVING FENCE POSTS

Each year with the decreasing supply of timber, the farmer, necessarily feels the increased cost of fence posts. It may be true that he has his wood plot from which he can cut fence posts, but it must be remembered that the average price of a fence post increases even tho the farmer does not pay more in cash, but his wood has a greater proportionate value. Any process which will prolong the life of a fence post, adds that much cash to his pocket and lessens the cost of labor necessarily employed in setting the post.

Wood preservation is one subject to which the Forest Service is now paying particular attention, and is considered of such importance that the business of one office, with new headquarters at Madison, Wisconsin, is given over entirely to the work of experiments in co-operation with corporations and individuals in prolonging the life of railroad ties, mine props, bridge timbers, fence posts, etc.

The average cost of an untreated fence post in the United States is estimated to be 10 cents. The value of the labor necessary to place it in the line is also 10 cents, making the set post cost 20 cents. Its average length of life is eight years. Compounding interest at 6 per cent, the annual charge for such a post is 3.2 cents; that is, it costs 3.2 cents a year to keep such a post in service. If given a preservative treatment, at a cost of 12 cents, the life of the post is increased to twenty-two years. The total cost of such a post, set, is then 32 cents, which, compounded at the same rate, gives an annual charge of 2.8 cents. Altho the yearly saving of six-tenths of a cent per post may seem small, yet on a 100-acre farm, there would be an annual saving of nearly \$7 provided there is only one fence on the farm and that around the limits of the field; but on how many farms is there but one fence—more likely there will be many small fields with so many more

posts to look after. Another way to look at this question is to figure that every eight years the farmer must replace his post at a total cost of 20 cents, so that during the space of twenty-two years he will probably have paid out sixty cents for a single post in that fence; while by subjecting the post to treatment upon its erection, thirty-two cents will be the total outlay. It must also be figured out that as years roll on the cost of a stick of timber will increase—not diminish. It is estimated that there are four billion posts in the fence lines in the United States, and if all these were treated there would be a saving of about twenty-four million dollars per year. The case cited above is the average for the entire country, timbered regions as well as prairie, and in many localities a much greater saving can be secured. Thus in the south, a thoroly treated scrub or old field pine post is more than the equal of an untreated red cedar; and in the middle western and Rocky Mountain states cottonwood, willow, or lodge-pole pine can, by treatment, be made to give much better service than the expensive cedar shipped from the extreme Northwest.

A simple method for use on the average farm is dipping the posts in a preservative contained in a shallow vat. The time the timber is allowed to remain in the preservative varies from a very short immersion to fifteen or twenty minutes, or even longer, depending principally upon the moisture content, of the timber (whether green or seasoned), the readiness with which it absorbs the preservative, and the desired limit of expense.

If a farmer does not desire to go to the expense, himself, to build the vat or tank, he may either charge a nominal fee to others for the use of his equipment, or neighbors may cooperate with one another and build the simple tank at a convenient location for all.

A NEW KIND OF CORN FROM CHINA

A small lot of shelled corn, of a kind that is new to this country, was sent to the U. S. Department of Agriculture from Shanghai, China, in 1908, and tested the same season. It proved to have qualities that may make it valuable in breeding a corn adapted to the hot and dry conditions of the Southwest. The plants raised in the test averaged less than 6 feet in height, with an average of 12 green leaves at the time of tasseling. The ears averaged 5½ inches in length and four and one-third inches in greatest circumference, with 16 to 18 rows of small grains. On the upper part of the plant the leaves are all on one side of the stalk, instead of being arranged in two rows on opposite sides. Besides this, the upper leaves stand erect, in-

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IT WOULD be impossible to tell the readers of The North Dakota Farmer in this short space the wonderful story of THE AMERICAN WOMAN'S LEAGUE—how it was conceived and founded; how its rapid growth has spread from coast to coast and now numbers tens of thousands of enthusiastic members in all walks of life; of its great plans and purposes; of the work it is doing now; of the immense practical services it renders its members, through the working out, in a strictly businesslike manner, of its central idea—**co-operation**.

But the full story is told in a booklet "The American Woman's League, its Plan and Purpose," and you have but to fill out and mail the Coupon below, or write a postal card, to get this booklet promptly, by return mail.

Every Woman, whether Mother, Wife or Daughter; every Man, whether Father or Son, is **vitaly interested** in the construction of the magnificent gateway to greater opportunity for intellectual, social and industrial advancement which the AMERICAN WOMAN'S LEAGUE is erecting in its daily gathering of strength.

The League is a National Association of Women (with men as honorary members) banded together for mutual benefit, protection, education and advancement. It is not a "secret society"; it is not an insurance organization, nor is it a charity. It is founded and operated on safe, conservative, economically sound, **business principles**. Its membership is spread throughout the entire United States.

In every community, town or city where there are sufficient members (from twenty-five on up) beautiful local Club Houses are erected by the LEAGUE for the sole use of its members, **free of expense**, and provided with a fund for the maintenance of these Club Houses.

The requirements for membership are simple, and easy of fulfillment—may be met by any intelligent person in a few days, or a week's time (although a full year is allowed), and once performed, entitles the member to **all** the benefits and advantages of the entire organization FOR LIFE as a right of membership. **There are no dues, there is none of the member's money required**—simply a pleasant service, easy and dignified of performance. You will realize this when you get the booklet!

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The Building-Loan and Relief Fund from which members may borrow money at a low rate of interest for home-building, and for assistance in times of need or distress.

The National Woman's Exchange, amplifying to National scope the best work of Women's Exchanges, affording a channel for the sale, at profitable prices, of articles made by members. In connection with the courses of the University, it solves for many women the very problem of existence. It acts as purchasing agent for the LEAGUE'S membership, if they wish, supplying their needs and wants in every line, through co-operative principles of buying, at lower prices than as individuals they could hope to secure.

The Circulating Libraries of Phonograph Records and Books, bringing into the homes of members,

wherever the mails reach, the best of the world's music and entertainment, reading and instruction possible to secure.

The Legal Department, furnishing free advice to members on legal matters of a personal character.

The Retreat, proposed to be erected in University City, Missouri, the Capital City of the LEAGUE, for the care, in comfort and happiness, of members who may become destitute. And an Orphanage for the care and education of minor children of deceased members who may be left alone in the world without friends or means.

Any woman of the white race is eligible for membership, and, as a member, is entitled to the advantages and use of **all** the institutions of the LEAGUE for life. A man may become an honorary member, entitled to the free use of the various institutions, barring the Retreat and Orphanage and Loan and Relief Fund.

Send to-day for the booklet fully explaining how all these **leading** features of the LEAGUE Plan, and many others of lesser importance, are carried out completely without the members having to pay any initiation fees, dues or assessments either at the beginning or at any other time.

The Founder's Chapter of the LEAGUE, **entitling the first one hundred thousand members to special advantages**, is fast filling up—delay may prevent the possibility of YOU becoming a becoming a member of the Founder's Chapter. Don't say "It can't be done" until you have given us the opportunity to prove to you that **it is being done**. Address all communications

The American Woman's League

7049 Delmar Boulevard, University City, St. Louis, Mo.

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Please send me, without obligation on my part,
the booklet "The American Woman's
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stead of drooping, and the tips of the leaves are therefore above the top of the tassel. The silks of the ear are produced at the point where the leaf blade is joined to the leaf sheath, and they appear before there is any sign of an ear except a slight swelling.

This corn is very different from any that is now produced in America. Its peculiar value is that the erect arrangement of the leaves on one side of the stalk and the appearance of the silks in the angle where the leaf blade joins the sheath offer a protected place in which pollen can settle and fertilize the silks before the latter are ever exposed to the air. This is an excellent arrangement for preventing the drying out of the silks before pollination. While this corn may be of little value itself, it is likely that, by cross-breeding, these desirable qualities can be imparted to a larger corn, which will thus be better adapted to the Southwest.

The discovery of this peculiar corn in China suggests anew the idea that, altho America is the original home of corn, yet it may by some means have been taken to the Eastern Hemisphere long before the discovery of America by Columbus. From descriptions in Chinese literature corn is known to have been established in China within less than a century after the voyage of Columbus. But this seems a short time for any plant to have become widely known and used. Besides, this particular corn is so different from anything in the New World that it must have been developed in the Old World, and for that to happen in a natural way would take a very long time. These ideas are brought out in Bulletin 161 of the Bureau of Plant Industry, which gives also an account of some cross-breeding experiments with the new corn and the changes which crossing produces in the grains the same season.

SOUTHERN IDAHO AS AN IDEAL LOCATION

By F. S. Greer

The Snake river valley in sunny southern Idaho is famed for its fruits, grains, vegetables and alfalfa. Crops never fail because Irrigation is King. Hail storms, cyclones, blizzards and electric storms are unknown, and the climate is mild in winter and pleasant in summer with cool, quiet, nights insuring a good rest.

Land formerly a vast sage desert is rapidly being converted into gardens and large commercial orchards.

Lands purchased in the Snake river valley will yield 20% on the investment the first year and when into bearing orchard will produce 50% of the purchase price the first year of bearing. This land will double in value in three years.

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telling the whole story of steam plowing. Shows steam-plowing scenes and gives letters from steam-plow users.

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The cost is still within the reach of all desiring to procure a home, unimproved land being available within two miles of Mountain Home at from \$40 to \$50 per acre, and improved land into orchard and alfalfa at from \$250 to \$300 per acre.

Ranchers find ready market for products, eggs selling at from 20 cents to 30 cents per dozen, butter at from 30 cents to 40 cents per lb., potatoes at from \$1.25 to \$3.00 per 100 lbs., small fruits at from 3 cents to 5 cents per lb., apples at from \$1.25 to \$4.00 per box, alfalfa at from \$10.00 to \$13.00 per ton

and timothy at from \$15.00 to \$20.00 per ton.

Draft horses are sold for from \$300 to \$500 per team, and milch cows at from \$40 to \$75.

I am not a real estate shark and have no land for sale but in traveling, as I have, thru all the northern states and Canada, I have met many who are seeking an ideal location and for their benefit I have written this description of the Snake river valley of southern Idaho.

When writing advertisers please mention the North Dakota Farmer.

SUCCESSFUL FARMS AS OBJECT LESSONS

Several years ago, it occurred to a practical scientist of the United States Department of Agriculture that some of the best managed farms in different sections might be made to serve as object lessons. The first fruit of this idea was the published account of "A Model Farm" in Pennsylvania, which attracted wide attention. Since then a number of popular bulletins have been issued describing successful farms in different sections and outlining their management. The list to date includes "A Successful Hog and Seed-Corn Farm" in Illinois; "A Profitable Tenant Dairy Farm" in Michigan; "A Successful Southern Hay Farm" in South Carolina; "A Successful Dairy and Poultry Farm" in Washington; and "Small Farms in the Corn Belt."

The latest bulletin of this class (Farmers' Bulletin No. 364) gives an account of a "Profitable Cotton Farm" in South Carolina. The farm in question was in 1902, when its present owner took possession, an old run-down cotton farm. Now it is fertile, well improved with fences and farm buildings, and is producing crops which yield the owner a large income and a handsome profit. All this has been accomplished by deep and thoro cultivation of the soil, by the use of barnyard manure and some commercial fertilizer, by rotation of crops, and by the industry and good judgment of the farmer himself.

This farm contains 132 acres, only half of which is planted to crops. The farmer has divided his tilled land into three equal fields on which he raises corn, oats, and cotton, in succession. Before he took the farm it was producing only 5 to 8 bushels of corn or 300 pounds of seed cotton to the acre. The first year he made it produce 1½ bales of cotton and 37 bushels of corn to the acre. Now his yields per acre are 2¼ bales of cotton, 85 bushels of corn, and 80 bushels of oats. He keeps about 24 head of native cattle, mainly for the sake of the manure, although they yield him a small profit besides. Altogether, the outline of this farmer's methods and results ought to prove suggestive and useful to many Southern farmers. These Farmers' Bulletins are for distribution by Senators and Representatives as well as by the Department.

SCOPE OF ERDMAN LAW

Charles W. Bunn, General Counsel of the Northern Pacific Company

The law was passed by Congress June 1, 1908, and its material provisions are below stated.

Whenever a controversy arises con-

GRAND 5-YEAR OFFER, PAGE 20

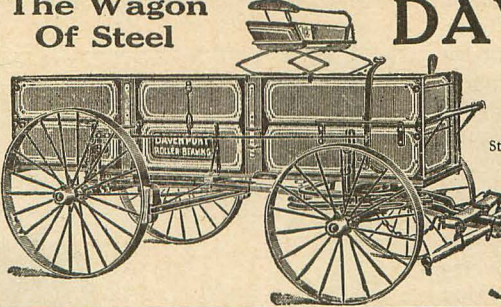
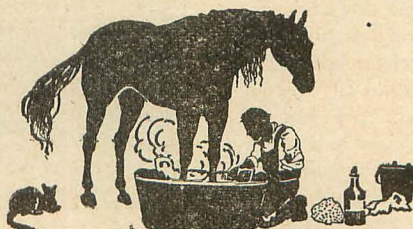
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Learn how "bishoping" is done—how a "heaver" is "shut"—a roarer "plugged"—how lameness, spavins, and sweeny are temporarily hidden—the "burglar" dodge—the horsehair trick—cocaine and gasoline doping—the ginger trick—the loose shoe trick—in short how to beat **ALL** the games of crooked auctioneers and dealers.

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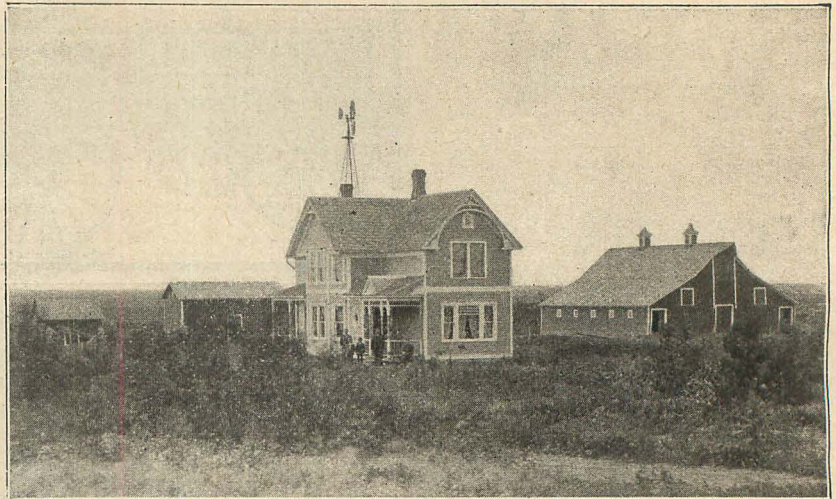
Lisbon, N. D.

cerning wages, hours of labor or conditions of employment, seriously interrupting or threatening to interrupt the business of the carrier, the chairmen of the interstate commerce commission of labor are required, upon request of either the carrier or the employees, to use their best efforts, by mediation and conciliation, amicably to settle the same.

The next section of the law says that if their mediation fails the controversy may be settled by arbitration (note that this requires consent of both parties); that the carrier shall select one arbitrator, the labor organization one, and the two thus chosen shall select a third; if the first two arbitrators fail to select a third within five days he is to be chosen by the commissioners above mentioned. A majority of the board thus chosen is empowered to settle the dispute. The board is required by the next section of the law to commence its hearings within 10 days and to make an award within 30 days. The act provides that pending the arbitration the status before existing shall not be changed, but provided that no employee shall be compelled to render personal service without his consent.

The law says this award "shall be final and conclusive upon both parties, unless set aside for error of law apparent on the record." The law next says that the award shall be faithfully carried out by the parties and that it may be enforced by the court, in so far as the powers of the court permit. But here again the law carefully provides that no injunction or other process shall issue to compel an employee to work against his will. So that the award whilst perfectly binding on the employer is only morally so on the employee. The act next says that employees dissatisfied with the award shall not "by reason of such dissatisfaction" quit the service within three months without 30 days notice. The employer dissatisfied with the award is forbidden to discharge employees within three months because of such dissatisfaction without 30 days notice. The law continues the effect of the award during one year.

The act distinctly and in terms (4th section) limits the right of either party to take the controversy into court "except for matter of law apparent on the record." Upon such questions alone is any appeal to court given. No appeal therefore lies on questions of fact, on questions of the reasonableness of wages or of any of the terms of service. The questions of law which give the right to either party to appeal to the courts are such as: that the arbitrators did not hear the parties; or that they did not take an oath as the statute requires. Clearly this very restricted right to appeal to the courts is not important or material.



TWO NORTH DAKOTA PRODUCTS

Henry A. Wilberg, the subject of this sketch, is a product of North Dakota, having been born here in 1883. His environments have been rural, and by the time he attained to manhood he was a practical farmer.

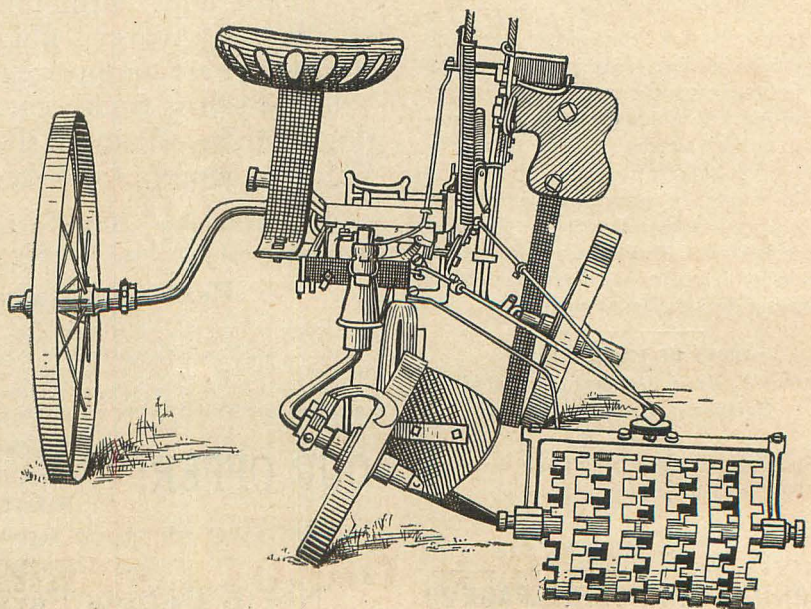
About five years ago while engaged in tilling the soil he observed when cross-plowing a field that the soil was so loose that it was difficult and hardly possible to make a plow work properly. The first plowing had been followed by harrowing. An adjoining piece of plowing had been followed by rolling. Here the ground was firm and the plow worked decidedly better.

This led Mr. Wilberg to start to study out the reasons, and to begin to experiment. The result was the invention of the Wilberg Pulverizer and Packer, (see cut) an attachment for plows. This

attachment can be used on any plow, singly or in gangs. It not only breaks up the large clods, but packs the soil firmly and puts it in the best possible condition, and conserves the moisture.

The first few pulverizing attachments manufactured by the inventor were put out on trial on neighboring farms. The result was immediate success. Soon they were being made on a larger scale, a few hundred at a time. The demand increased, until now they are manufactured by the thousand, controlled by the American Pulverizer Co., and jobbed by leading implement houses. The John Deere Co. distributes them as far south as Texas. The Parlin-Orrendorf Co. as far west as Portland, Oregon, and the Hamilton Co. in Canada.

Mr. Wilberg is not only a practical farmer, but a successful one, and owns a fine half-section farm two miles south of Nome, N. D., the accompanying cut showing the farm residence.



FEDERAL INSPECTION OF GRAIN

When manufacturing industries are established in this state on a large scale as they are bound to be, by reason of the enormous deposits of coal that underlie the surface of the state, there will be a large market for all of the products of the farm.

When this time arrives, when great industries are scattered all over the state, there will be a home market for all of the wheat raised, the farmer will be able to sell his wheat at the mill, at his own door, thus saving the freight and the so-called dockage, which will equal 20 cents the bushel, or an annual saving of \$12,000,000 to the wheat grower, so he is as much interested as any one in having manufacturing developed in this state.

Until there is a home market for all of the grain raised the grower will be compelled to ship to the Minnesota terminals, taking his chances on grading, weighing and docking. The only hope of securing a square deal for shippers now is in suitable federal legislation.

There is a measure before the United States Senate known as "McCumber Senate Bill 121" to provide for the inspection and grading of grain. This bill will be pressed for passage at this

session and there is likelihood of its becoming law.

Federal inspection of grain is of great importance to every resident of the state. It means fair dealings for the farmer at the terminals and the improvements it will bring about in weighing, grading and docking will equal at least 5 cents the bushel on every bushel shipped from the state, thus adding to the state wealth, at least \$5,000,000 annually, being \$8 for every man, woman and child.

This then is a question which comes home to every one. No one particular person or organization is more interested than another. It is the right and duty of every one to work for federal inspection.

The United Grain Growers' Association will get active in behalf of the McCumber bill and do what it can to make it law, believing as it does, that it is the best bill that has been put before the Congress.

The farmers must learn to manage their own business, just the same as the merchant. When a storekeeper marks up the price of his goods he does not call in the farmer and ask his advice. Why should the farmer call in the merchant and ask him what price to put on his ragin?

The farmer can control his business thru organizations entirely his own, officered by farmers and managed by them alone.

GRAND 5-YEAR OFFER, PAGE 20

FREE, to Boys and Girls, Flexible Flyer, "The sled that steers." The best sled in the world. You can easily secure one within a few days by doing a little pleasant work. Some have in a few hours. Be the first in your town. Write today, stating your age. A postal card will do. W. I. Davis, 155 East 24th St., New York City.

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One hundred and forty acre farm. About 2 1/2 miles from Crocker. When finished inside will be a nice 6-room house. Large log barn, hen house, smoke house. Some fruit. Springs. About 1 miles of woven wire fence balance rails. Price, \$2000. Time on \$650.

Eighty-acre farm, nice place, about 5 miles from town. Large orchard. Good 5-room house, large log barn. About half in cultivation, lots of saw timber. Price, \$1150. Time on \$400.

Forty-acre place about 2 miles from Crocker. On good road, near school. New 2-room house. Some fruit. Half in cultivation; 7 acres in wheat. Price, \$650. Time on \$200.

Crocker, Mo., is on the Frisco R. R., 146 miles southwest of St. Louis, in the Ozarks. The best country for health, climate, water, wood, and easy living on earth. Address,

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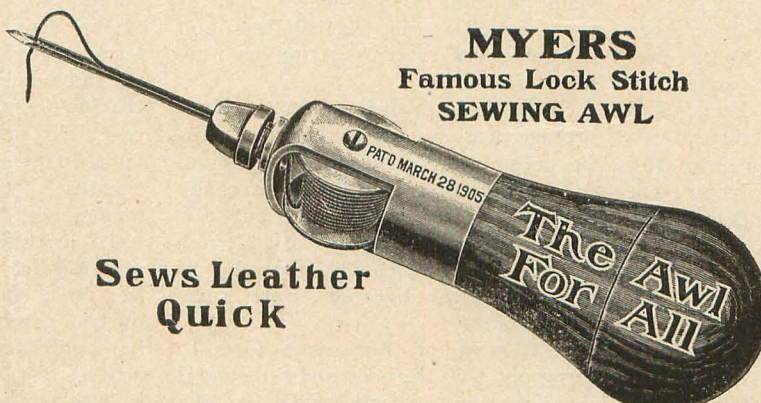
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NORTH DAKOTA FARMER, Lisbon, N. D.

DIET THAT CURES CONSUMPTION

By B. J. Kendall, M. D., Geneva, Ill.

The most certain method ever adopted for the cure of the "Great White Plague" is thru the diet used as per directions given below which can be taken at home and comes within the reach of the poor as well as the rich.

The modus operandi is to force the body to take on fat, a desideratum long felt by the medical profession but never before attained to. L

During the last fifteen years I have prescribed this diet in hundreds of instances and where directions have been followed strictly it has raised the weight and increased the strength and vitality of the patient rapidly up to a normal condition, thus enabling nature to assert her sovereign right to be the dominating force in the body and the germs causing consumption have been overcome and the cure accomplished. Some have gained a pound a day and would gradually take on less until they would not increase in weight more.

The all important thing is to drink large quantities of milk strippings (the very last of the milking.) This seems so simple and easy that many have refused to follow directions and demanded medicines to cure them; but there has not yet been discovered any medicine that is a specific for consumption. W

To get best results a healthy cow should be selected, one that does not cough and one that gives very rich milk. A Jersey cow is preferable. The milk should always be tested to be sure that there is a large per cent of cream in it.

The last quart should be milked into a separate dish which rests in a larger vessel containing warm water just sufficient to prevent the strippings from cooling below blood heat. The cow should be thoroly cleaned to prevent any dirt getting into the milk so the patient can blow back the froth and drink at once without straining as this cools it too much.

Begin by drinking nearly a pint in the morning and the same at night and increase the quantity gradually so that in 10 or 15 days a full quart will be taken twice a day. It should be taken immediately after milking before it has had time to cool any. All should be taken that can be without too much discomfort and then rest 2 or 3 minutes and drink more and rest again, and so on until a full

quart has been taken as soon as it can be conveniently. In about fifteen minutes the patient should eat at the table such articles of food as are known to agree with the stomach. At noon eat as usual.

When the strippings are not allowed to cool below blood heat and taken immediately after it is milked a full quart will be transfused into the circulation in a remarkably short time.

I never have seen a case but could take the strippings without any discomfort worth mentioning when above directions were followed strictly, although some have declared they could not before trying it; but when they delayed taking for half an hour and the milk had cooled ten degrees I have seen half a pint make them very sick. The great secret of success with it is in taking it immediately after milking and not allowing it to cool below blood heat, taking a full quart morning and evening and having milk that is very rich.

The following is a typical case. Mrs. A. E. was suddenly startled to find her weight was forty pounds below normal. She was coughing terribly and soon had a very profuse hemorrhage from the lungs that came near taking her life. I at once began the use of the milk strippings after hemorrhage was stopped and in a few days, about ten or fifteen, she had gained nearly a pound a day and was soon able to get out of bed and go around the house. She gained quite rapidly and as her weight and strength increased her cough decreased. When she had gained thirty pounds in about three months her cough had left her. I had her continue the same diet for 6 or 8 weeks longer and she gained ten pounds more and then would not take on more flesh. She was then as well as she ever had been and continued well after the strippings were discontinued.

She took no medicine after the hemorrhage was stopped excepting a little pepsine and some other digestives to aid digestion and a simple cough remedy to ease the cough; but tar, iobelia, opium, tartar emetic and such medicines as disturb the stomach and interfere with digestion were carefully avoided.

It is easy for those on a farm to carry out this method, and on several occasions parties who lived in the city purchased a suitable cow and after complete recovery, in every instance, they sold the cow for nearly as much as was paid for her.

I do not remember any case that

followed the directions strictly that was not cured, but several persisted in declaring they could not take it until so much valuable time was wasted that they lost their lives by it.

I have found the same diet when above directions were carried out carefully, equally successful in increasing the weight and strength of those run down and debilitated from other causes.

WHEAT GROWING ARISTOCRATS

B. H. Bachelor, Fargo

The great daily papers in the east do not seem able to comprehend the position of the farmer in the body politic, nor do they understand the difficulties of farm life. The cost of production of wheat and other things raised on the farm, is underestimated. So that to the average man in the east, the wheat grower is looked upon as an aristocrat, a man of great wealth, living in luxury.

The New York Sun in its issue of December 12th publishes an editorial "Predatory Farmers" excerpts from which contain information likely to be of interest to North Dakota wheat growers. "Giving proper weight to the matter of natural resources, it is very doubtful if 15 cents a gallon or even 20 cents a gallon for kerosene, or \$23 a ton for steel rails is a greater social offense or a greater economic wrong than is the price of \$1.25 a bushel for wheat." Competent authorities give \$7.50 an acre as the average cost of rent and production for continuous wheat cropping. Measured by the average yield that would mean a little less than 55 cts. a bushel."

No doubt that the figures of cost as quoted will be news to the vast majority of farmers in this state. Should the farmer figure his cost of production, in the same manner as the management of the Sun does theirs, he would find that it costs him one dollar the bushel. The United Grain Growers' Association, estimates that the average cost of producing wheat in this state.

To quote further from the Sun "The robberies of these producers may be less direct than those achieved by industrial corporations, but they are perhaps quite as effective. If our money is taken from us it matters little whether it is taken directly, by scientific or by unscientific methods."

The East has worked this part of the country with great profit for years. Will the people here continue to furnish them food at cost?

DON'T BUY GASOLINE ENGINES UNTIL YOU INVESTIGATE "THE MASTER WORKMAN," a two-cylinder gasoline, kerosene or alcohol engine, superior to any one-cylinder engine; revolutionizing power. Its weight and bulk are half that of single cylinder engines, with greater durability. Costs less to buy—less to run. Quickly, easily started. Vibration practically overcome. Cheaply mounted on any wagon. It is a combination portable, stationary or traction engine. SEND FOR CATALOGUE. THE TEMPLE ENGINE MFG. CO., 481 West 15th St., Chicago. THIS IS OUR FIFTY SIXTH YEAR.

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For a new subscription and a renewal you may have your choice of any eight selections. Send \$1.00 and name of a new subscriber and an old subscriber.

This music is printed in as clear type as the regular 25-cent and 50-cent kind and the title page is printed artistically in colors.

North Dakota Farmer, Lisbon, N. Dak.

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- 3 Autumn Gavotte (Merry Bells).....Vogler
- 4 Beautiful Blue Danube, Waltz.....Strauss
- 5 Black Hawk, Waltz Walsh
- 6 Bluetts Polka (Merry Bells).....Vogler
- 7 Brook, The.....Spindler
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- 9 Con Amore (With My Love).....Beaumont
- 10 Convent Bells, La Clochette.....Ludovic
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- 81 Anvil Chorus (from II Trovatore).....Verdi
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- 84 Black Key, Polka Maruzka.....Herzog

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- 136 Cherry Blossoms.....Troja
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- 151 "Let'er Go," March.....Wood
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- 187 Waltz Dream, A.....Strauss
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- 190 Calvary (High).....Rodney
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- 219 Ave Maria.....Mascagni
- 220 Angel Voices Ever Near.....Roberts
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- 229 Battle Cry of Freedom.....Root
- 230 Columbia, the Gem of the Ocean.....Shaw
- 231 Does He Love Me, or Love Me Not? (C. Medium).....Sterling
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- 233 Drop In On Mother and Me.....Helf
- 234 Eat, Drink and Be Merry.....Wilson
- 235 Eddie, Eddie, Oh.....Corin
- 236 From the Toils of the Sea.....Trevelyan
- 237 Good Old Days Gone By, The.....Von Tilzer
- 238 Home, Home, Dear Home (Eb. Med.).....Trevelyan
- 239 How Can I Bear to Leave Thee.....Meiser-Kinkel
- 240 If All the Girls Were Roses.....Pratt
- 267 When First I Saw the Love-light in Your Eyes.....Wood

North Dakota Farmer

AND SANITARY HOME

Entered as second class matter in the postoffice at
Lisbon, North Dakota.

PUBLISHED EVERY MONTH

E. F. LADD & CO., PUBLISHERS.
Lisbon and Fargo, N. D.

EDITORIAL MANAGEMENT, FARGO, N. D.
E. F. Ladd, Editor

BUSINESS MANAGEMENT, LISBON, N. D.
W. G. Crocker, Business Manager

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PROF. C. B. WALDRON, Fruits, Forestry, and
Insect Pests.
PROF. O. W. DYNES, Poultry

TERMS: One Year, 50 cents.

Remittances should be made by Draft, Post-
office Order or Express Order.

All Articles and Editorial Matter should be
addressed to E. F. Ladd, Fargo, N. D.

Address all business correspondence to the
Lisbon office.

Vol. 11 JANUARY, 1910. No. 7

INFLUENCES AT WORK

According to press reports, one of the great American trusts, thru sworn testimony taken in court in legislative and congressional investigations and in other proceedings, has been shown to be guilty of the following:

1. Bribing political committees of both parties.
2. Seeking to influence U. S. senators by stock tips and other financial transactions.
3. Accepting rebates in violation of the interstate commerce law.
4. Stealing from the U. S. government thru weighing frauds.
5. Conspiracy to ruin independent manufacturers in their same line.
6. Violating persistently the Sherman Anti-Trust laws.
7. Using short-weight scales.
8. Blacklisting dealers who handle the products of independent companies.
9. Importing cheap contract labor.
10. Violating factory and health laws.

When powerful corporations and trusts control so thoroly the affairs of the country in the manufacture and distribution of any single product, how can it be expected that there can be competition, fairness or honesty, or how can we expect that those who would naturally be honest, shall not become embittered, not only against all trusts and organizations of like character, but against the Government which has not thus far been able to bring one of these offenders to justice?

THE CARE OF FOOD IN THE HOME

In the buying, storing, and handling of food it is important that we realize the causes of what is called the spoiling of food. And the knowledge that the spoiling is due to yeasts, molds, and bacteria is comparatively recent.

Countless numbers of tiny living things called micro-organisms are everywhere found which will grow in the food man has prepared for his own use and cause it to spoil. These microscopic plants flourish in the kitchen, storeroom, ice box, milk room, and cellar. The bulk of these minute forms of life are harmless, under usual conditions; some are useful, like those which ripen milk; and many are harmful, since they cause waste or may be a direct cause of disease.

Not only do yeasts, molds, and bacteria appropriate our food, with the result that it sours, rots, or putrefies, but they sometimes leave behind disagreeable consequences like the musty and moldy odor and flavor of some spoiled foods, or the substances called ptomaines, which are sometimes poisonous.

Not until millions of yeast cells are massed together do they become visible to the eye as in the compressed yeast cake. Yeast plants are practically everywhere and are of many varieties, some being called wild yeasts, in distinction from those we have learned to cultivate for the making of bread. The old-fashioned method of making milk-rising or salt-rising bread depended on wild yeast falling into dough and causing the bread to rise, a method not always successful, because other organisms, the bacteria, also had a chance at the dough, and sometimes got the better of the yeast in the struggle for food, and the result of their life in the dough was sour or bitter bread.

Even when we are able to utilize the life processes of the yeast plant, its good offices are paid for with a certain amount of food material; thus, when introduced into the bread dough it breaks up part of the sugar present into alcohol and carbonic-acid gas, and the gas stretches out in the glutinous mass, making the porous loaf which at the right moment is stiffened by the heat of the oven.

In the same way the wild yeast attacks the sugar in the stewed fruit that has stood exposed on a warm day or the jelly left uncovered, or sometimes even when apparently covered, only in these cases the gas evolved serves no useful purpose and the fermentation ruins the taste of the food. Yeasts grow best at a temperature of 70 degrees to 90 degrees F.; therefore, food that is to be protected from their action must be kept well below that point.

The appearance of mold as growing on bread, cheese, and other foods is familiar to every housewife. The spores of the

different varieties of mold are everywhere present, and they need only warmth and moisture to enable them to grow on many kinds of food. These organisms are always at work in damp cellars and in dark and damp corners of rooms; they are borne on the feet of insects, they are on the skins of all fruits, and in the dust flying in the air. They are not fond of light and they require no great abundance of air, flourishing best in foods that are piled close together, leaving small, undisturbed air spaces and moisture.

The growth of most molds is retarded by light, ventilation, and low temperature.

From the standpoint of household sanitation, bacteria are the most important of these micro-organisms. They are very widely distributed; the soil teems with them; they are in the air, in water, and in all food exposed to dust and air.

In some foods bacteria in the early stages of their action leave no disagreeable or unhealthful effects, so far as yet proved. Meat is in some measure ripened by bacterial action, and the "gamey" taste given meat by "hanging" comes in part from the same cause, tho in both cases the changes are chiefly due to the action of ferments normally present. It is not easy to draw the line between the harmless ripening processes and the bacterial changes classed as decay, but if the bacteria are allowed to grow without hindrance the time comes when the food, either animal or vegetable, attacked by bacteria breaks up into a loathsome mass.

The food may become dangerous even before it shows outward signs of decomposition, for the bacteria may give off substances known as ptomaines, some of which are very poisonous to man. Certain apparently mysterious cases of illness have been traced to such causes, and milk, fish, meat, cheese, baked beans, ice cream, and other foods have all been found responsible for food poisoning. This sort of poisoning is not a true bacterial disease; that is, it is not due, as is typhoid fever, to the growth of an organism in the body, but the illness results from the introduction into the system of poisonous substances already formed in the food by the bacteria.

A new meaning for the scrubbing, airing, and sunning that for many generations have been practiced by good housekeepers, together with good reasons for the need of other precautions to be taken for home sanitation, will be found in Farmers' Bulletin 375, "Care of Food in the Home," just issued by the U. S. Department of Agriculture.

GRAND 5-YEAR OFFER, PAGE 20

Pure Food Advertisers

The products advertised below are in compliance with the pure food law of North Dakota and of the highest grade.
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Cereals, Sauces, Catsups, Syrup, Molasses, Starches,
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COME GUEST at every table where the
HOUSEWIFE demands the BEST. THE
MONARCH LABEL insures QUALITY in
Coffee, Catsup, Pickles, Maple Syrup, Canned
Goods or any article bearing the MONARCH
BRAND of REID MURDOCH & CO.,
CHICAGO.

NEWELL'S EXTRA LINE

Represents the highest quality of products
that can possibly be obtained. Purity and
quality always stand foremost.

Geo. R. Newell & Co.,

WHOLESALE GROCERS,

MINNEAPOLIS,

-MINN.



OUR GREAT AGRICULTURAL PROSPERITY Present and Future

By J. H. Worst

The fact that the agricultural products of the United States aggregate the tremendous sum of \$8,760,000,000 for the year 1909 is indeed gratifying. It is a demonstration both of the position agriculture occupies as the leading American industry and the importance of fostering it in every legitimate way.

The Department of Agriculture has done much to bring about this result. The farmers' institute has contributed its share toward improved agriculture. The agricultural colleges and experiment stations have awakened new interest in farm management and agricultural methods, but the farmers themselves have toiled early and late to bring about this era of prosperity.

They have not been slow to grasp scientific truths when presented to them by investigators, nor have they been backward in forsaking the old ruts for improved methods suggested by their own experience. The production of this vast volume of wealth spells prosperity for the whole country. It is not confined to farmers. Business men, bankers, professional men, and manufacturers—all participate in the general prosperity.

This being true, all should take a deep interest in agriculture and especially in perpetuating the productive powers of the soil; also in fostering that system of education which inspires culture and intellectuality from those sciences and their related arts which have a direct bearing upon agriculture.

When men study agriculture, as lawyers study law and doctors study medicine, the fields will yield two-fold more, without material increase of labor, for the reason that the forces of nature, when intelligently directed, are

as flexible and obedient to the human will as steam, electricity, or falling water. But we must learn how.

It requires no more food, care and shelter for the maintenance of a cow that produces annually 400 pounds of butter than for one that makes 150 pounds. It is only a matter of selection, breeding, and good judgment.

A good judge of seed grain, if at the same time an expert in farm management, can increase the yield of cereals sufficiently to double his profits, with scarcely an additional stroke of work. He can also double his profits from breeding and feeding beef cattle, sheep or hogs by exercising good judgment—another name for agricultural education. Good judgment also stands the farmer equally well in hand when disposing of his products; in selling. If others fix the price for his grain, wool, beef, pork, and dairy products, it is largely his own fault. An industry that annually produces nearly \$9,000,000,000 of wealth—wealth that the world must have—need not be at the mercy of any one. Co-operation will cure this defect, and co-operation should be a fundamental element in agricultural education.

But, says one, the earth's powers of production are weakened by such tremendous draughts upon its vital forces. True, but there is a remedy. Manure and legumes will maintain—even increase the fertility of the soil, but the legumes must be grown and the manure must be applied. Weeds, parasites, and fungi also multiply and infest the soil and diminish or destroy the crops. For most of them, however, a systematic rotation of crops is a remedy, and for others the investigator provides a specific. Moreover, the study of agriculture reveals much that is interesting and more that is useful and profitable. Hap-hazard, automatic, or grandfather methods are on the decline. Good farming is no longer an accident. It is founded upon intelligence, skill, and economy.

Agriculture is gradually building for itself a literature, drawn from the body of knowledge that is being accumulated by research and investigation, and when the coming farmers are as conversant with this literature as other professions are with the literature of their vocations, then agriculture will come into its own.

The farm is a great laboratory upon which the natural sciences center and where man may not only profitably employ his time and thought but fill his days with the joy that comes from knowing. The profits are not large, as measured by modern Big Business rules, but vastly more certain, and withal sufficient to supply the family with every home comfort without severe drudgery or probability of failure.

Nine billion dollars is a large sum of money to create in a single year, tho it must be remembered that much of this is gained at the expense of the soil. We now have more dollars but less from which the dollars were created. For the country's good; for the benefit of all classes; for the continued prosperity of the nation, it is apparent that a large share of our educational energy should be directed toward training young men in the management of farms by such scientific methods that the soil will never wear out—that it will become more and more productive the longer it is cultivated.

We have long educated away from the farm. It should require no argument, therefore, in favor of that type of education which imparts culture from studying nature, which develops reason and imagination from contemplating her operations, and charity from her benevolence.

Unless agriculture, the greatest and most essential of human industries, is grounded upon a sure educational foundation it may fail in the hour of the world's greatest need. What we are now producing, largely at the expense of nature's hitherto stored up energy, we not only must learn to produce in ever increasing quantities, but also to make full compensation to the soil, annually, for every impoverishing influence the crops exert upon it.

GRAND 5-YEAR OFFER, PAGE 20

"GRANT'S
Candies are
PURE."

HONEY Well ripened clover Honey for Sale, guaranteed absolutely pure and of the finest quality. One 30-lb. can 11 1/2¢ per lb.; 2 or more cans 11¢; 12-lb. cans, in full cases of 72 lbs., 11 1/2¢ per lb. Send for price list. Address

M. V. FACEY, Preston, Fillmore Co., Minn

SHIP YOUR
WHEAT
—TO—
FARGO MILL CO.
WE PAY DRAFTS.

GROCERIES

Buy at wholesale and save money. Write today for free catalog 103. **GRIGGS & CO., ST. PAUL**

When writing advertisers please mention the North Dakota Farmer.

Livestock Department

PROF. W. B. RICHARDS, Editor

FEED AND STOCK NOTES

By L. I. Shepherd

To make a success avoid extremes.

Regular feeding makes animals more content.

With a variety of stock one can utilize all food products.

Best breeds do not insure most profit without proper treatment.

The better the food fed the better care should be taken to save the manure.

Never leave a horse after driving in the mud until his feet and legs are rubbed dry.

The practice of breeding stock before it has fully matured has a tendency to weaken the constitutional vigor.

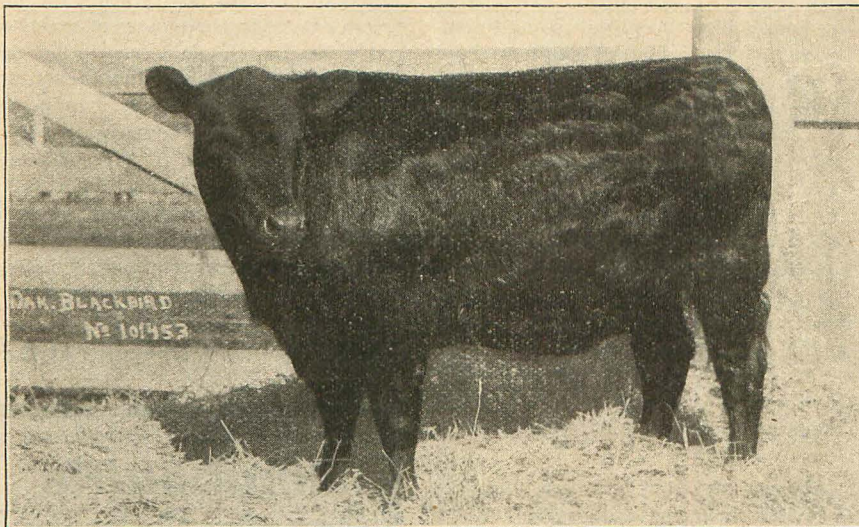
no exercise may induce rapid growth, but the colt will be soft, and lacking in constitutional vigor.

There is a general tendency toward an increase in land values. To equalize the matter, it must be made to produce more valuable crops.

Animals that are to come in early in the spring should receive special attention now. The vitality of the offspring largely depends upon the condition of the parent.

In very many localities it costs the farmer far more proportionately to get a bushel of grain to his nearest station than by railroad to the seaboard.

The market value of food products fed to any animal that is to be eaten begins



Dakota Blackbird, No. 101453, an Aberdeen Angus Heifer, owned by R. A. Candor, Cogswell, N. D.

The more an article is put into condition to suit the purchaser the better it is for the seller.

The more time it takes to fatten an animal the greater becomes the cost of maintenance.

The surest and best way to keep up with agricultural progress is to take a live agricultural journal.

Fine type, constitutional vigor, special adaptability and performance are matters of inheritance.

The value of a crop depends upon its productiveness; that depends upon good soil, good seed and wise cultivation.

The only free man, and the only farmer who can get the full profit from his work, is the one who pays as he goes.

Close confinement, heavy feeding, and

to decrease as soon as the animal arrives at maturity.

Cross-breeding is mixing two well established breeds and is rarely ever successful. Grading up is breeding a scrub to a thoroughbred and repeating the operation for successive generations.

There is one rule in stock raising that may be steadily and safely followed without deviation. It is to push all stock to its full growth as rapidly as possible and sell as soon as fully ready for market.

A single article of food may contain all elements necessary to sustain life and promote growth yet it does not follow that its use would be economical. It may contain some elements in excess of the needs of the animal.

AMERICAN BEEF PRODUCERS' ASSOCIATION

Recent investigations seem to show that the beef supply of the country is not keeping pace with the growing demand. This is due to a number of conditions. The rapid influx of settlers into the territory heretofore used by the herds of range cattle has rapidly decreased the number of range cattle, while the new settlers are not handling cattle, either thru a lack of knowledge regarding breeding and feeding, or, more often the case, they are not financially able to enter into the industry. As a result the range herds are being dispersed and it will take some time to enable the new farmers to become sufficiently interested in cattle growing to make up for the herds that have been driven out by the farms.

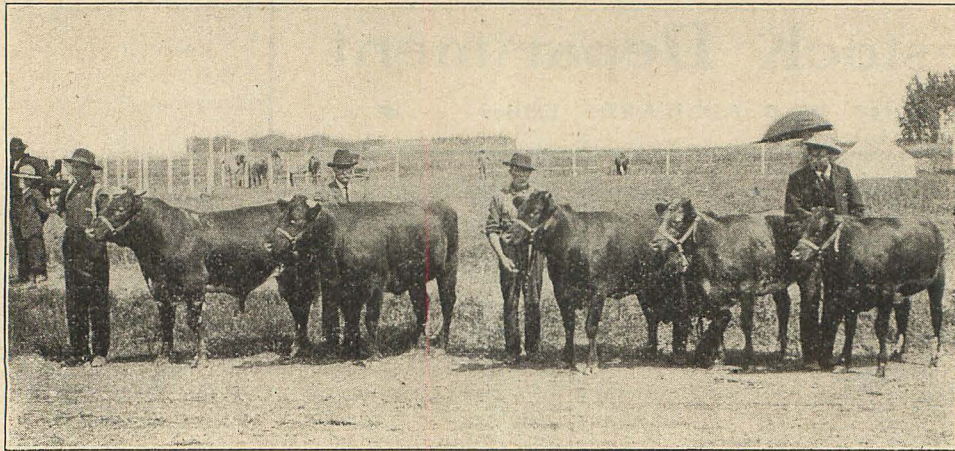
The steadily increasing demand for corn and wheat, and the consequent high prices that have prevailed, has induced stock feeders and breeders in the corn states to plow up pasture lands and put in grain crops which bring profitable cash prices. This has been decreasing the number of cattle marketed from the Middle West.

In the meanwhile the population of the country is increasing steadily and as the population increases the meat food demand increases. Under these conditions the operation of the natural law of supply and demand is rapidly increasing the price of cattle and consequently the price of beef.

The Beef Producers' Association of America has been organized by the National beef breed associations for the purpose of educating the farmers into an understanding of the profits to be made in breeding and feeding cattle and to educate the consumer in a better knowledge of the beef carcass. At the present time 80 per cent of the American beef consumers demand cuts from the loin and ribs of the carcass, which constitute only about 25 per cent of the supply. As a result of this unequal demand, cuts from the loin and ribs command from two to eight times the price for other portions of the carcass, altho the cheaper cuts are just as nutritive and fully as tasteful if properly prepared. In European countries, where the scarcity of meat has long ago taught the lesson, the demand is equalized over the whole carcass with the result that even with high prices prevailing for cattle the people are able to pay the prices demanded.

The aim of the Beef Producers' Association is two fold; to make the available supply go as far as possible in supplying the demand and to as speedily as possible, increase the supply to a point where the demand of the country can be met on a price basis that will encourage the maximum consumption.

A number of the domestic science



Young Herd of Shorthorns. Prize Winners at State Fairs. Owned by S. Fletcher, Matteson, N. D.

schools of the country have agreed to assist in this work by experimenting in the preparation and cooking of the cheaper cuts of the beef. Recipes will be prepared and will be given to the public thru the press, so that all may benefit.

America is a beef eating country, and there is no desire on the part of the producer that beef should reach such a high price that it will become a luxury that only the wealthy can afford. The earnest desire of the beef producers is a normal supply for a normal demand. To secure this will be required co-operation on the part of both the consumer and producer.

THE GOVERNMENT MEAT INSPECTION

Dr. A. D. Melvin, Chief of the United States Bureau of Animal Industry, in his annual report to the Secretary of Agriculture, has the following to say with regard to the meat inspection:

During the past fiscal year there were inspected at the time of slaughter 35,672,075 animals, and of these there were condemned because of disease or other conditions 141,057 entire carcasses and 899,628 parts of carcasses, making a total of over 1,000,000 animals condemned in whole or in part. In addition there were condemned on reinspection nearly 25,000,000 pounds of meat and meat products which had become unwholesome since inspection at the time of slaughter.

The meat inspection has continued to grow in volume and has reached the point where further extension is impossible without an increase in the appropriation by Congress. The expenditures on account of this work during the fiscal year amounted to about \$2,884,000 out of an appropriation of \$3,000,000. At the close of the year the rate of expenditure was higher than at the beginning, and it is now only by the strictest economy that the service can be

maintained on its present basis without additional funds.

With the additional authority given by the new law the Bureau has been able to bring about a steady improvement with respect to sanitation. New packing houses have been built so as to embody the best modern sanitary construction, and great improvement has been made in the sanitary condition of the older plants. The latter are being gradually abandoned for the erection of modern plants which may be kept at a proper standard of cleanliness with less labor and expense. As a result of this improvement there has been a considerable decrease in the amount of meat condemned because of insanitary conditions. It has also been found that where cleanly methods are employed there is much less reason for the use of preservatives than under the old conditions.

A constant effort has been made to keep the service at a high standard of efficiency and to make improvements wherever possible. Notwithstanding the efforts to give the public a reliable inspection, however, the service has been made the object of unjust attacks. Serious charges made against the service at East St. Louis by a former employee were carefully and thoroly investigated and were found to be without any real foundation, but to have their origin in personal animosity. A full report of this investigation was published by the Department. In other cases the attacks have proved to be due to ignorance or misconception of the facts, a failure to understand the system of inspection, or a desire to cause sensation.

Thoro investigation of a number of reported cases of ptomaine poisoning attributed to inspected meat has failed to disclose a single instance in which the trouble could reasonably be ascribed to that cause. These investigations were undertaken largely because of assertions

by manufacturers of preservatives to the effect that the enforced discontinuance of preservatives was responsible for a great increase in the number of cases of ptomaine poisoning. The Bureau has failed to find any justification for such arguments. In three cases of extensive outbreaks in schools it was found that the trouble was really typhoid fever, and in one of these instances it appeared that the report of ptomaine poisoning was circulated with a view to concealing the real cause. Another report of a death from ptomaine poisoning from eating canned meat proved to have originated in the imagination of a newspaper correspondent, who acknowl-

GRAND 5-YEAR OFFER, PAGE 20

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for
 Curb, Splint, Sweeny, Capped Hock,
 Strained Tendons, Founder, Wind
 Puffs, and all lameness from Spavin,
 Ringbone and other bony tumors.
 Cures all skin diseases or Parasites,
 Thrush, Diphtheria. Removes all
 Bunches from Horses or Cattle.

**As a Human Remedy for Rheumatism,
 Sprains, Sore Throat, etc., it is invaluable.**
 Every bottle of Caustic Balsam sold is
 Warranted to give satisfaction. Price \$1.50
 per bottle. Sold by druggists, or sent by ex-
 press, charges paid, with full directions for
 its use. Send for descriptive circulars,
 testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

edged that it was untrue. The family had in fact eaten no canned meat, and the attending physician denied that there was any evidence of ptomaine poisoning.

There have been cases where meat bearing the Federal inspection mark was alleged to have been condemned as unwholesome by city or local authorities. Usually the fact is that the meat was sound at the time of being inspected and marked by the Federal inspectors and that the unwholesome condition arose afterwards. Everybody knows that meat is liable to spoil, and no inspection can guarantee that it will remain wholesome until consumed.

These instances are sufficient to show that credence should not be placed in published reports reflecting upon the meat inspection. The regulations are based not only upon the knowledge and experience of the Bureau staff, but upon the advice of high scientific authorities outside of the Department. The persons making up the inspection force are carefully selected thru civil-service examination, and their work is closely supervised. One class of employees consists of veterinarians who are graduates of certain recognized colleges and who have a thoro knowledge of animal diseases and their relation to human health. Other employees are chosen because of their expert knowledge of livestock, meats, sanitation, packing-house processes, etc.

There is, however, a real and serious danger to the public from uninspected meat, and almost half of the meat consumed in this country comes within that class. The Federal authority does not reach the business done entirely within a state, and the people must look to their state and local authorities to protect them against the danger from that source. One result of the Federal inspection is to cause the diversion of diseased and suspicious looking animals to the uninspected establishments where they are slaughtered for the local market. Many cities have an inspection service, but very few have an adequate force, and the inspection often consists merely in the examination of meat as offered for sale in the markets, when it is usually impossible to detect disease, the evidence of which may have been removed with the viscera or organs. As a rule sanitary conditions are very bad at uninspected slaughterhouses. In order to provide real protection against diseased or unwholesome meat a competent veterinary and sanitary inspection at the time of slaughter is essential. There is great need for supplementing the Federal inspection with state and municipal inspection.

FEEDER MAKES MONEY WITH FEED COST HIGH

Experience of H. O. Wickre

High-priced feed is indisputably the 'bugaboo' of the average feeder of livestock.

In spite of actual demonstrations and continued and unceasing efforts on the part of those experienced enough to know, it seems an almost impossible task to convince more than a small percentage of farmers that it is not best to sell their hay and grain when they can get what they consider a high price rather than put it in cattle or hogs and reap a double benefit.

And it is an even harder task to

attempt to tell the feeder who may have to buy all or a part of his supplies that he can afford to feed corn and hay when prices are as high as at present. Times without number have unfinished shipments of stock come to market because the owner could not see his way clear to purchase feed to properly finish.

In contradiction to this popular belief the case of Mr. H. O. Wickre, of Webster, S. D., who fed a load of cattle for the recent Northwestern Livestock show, may be cited. Mr. Wickre's cattle were awarded the cup in South St. Paul where they had practically no opposition but were unplaced at the International in Chicago where they came in competition with the best in the world. These facts are

ST. PAUL UNION STOCKYARDS COMPANY REPORT FOR DECEMBER RECEIPTS

	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P....	199	7	631	151	.....	18
C. G. W.....	868	45	4728	553	19	102
C. M. & St. P...	2138	247	13710	2682	35	284
M. & St. L.....	579	53	7274	234	.....	122
C. St. P. M. & O	1545	118	12906	3574	28	257
C. B. & Q.....	268	4	2561	1004	.....	48
Wis. Cent.....	50	9	437	263	.....	8
M. St. P. & S. S. M	2177	387	4864	2605	10	167
Gt. Nor.....	4201	992	13458	6276	42	385
Nor. Pac.....	5071	336	2901	17275	.....	318
S. Y. T. Ry. Co. ....	.....	.....	.....	.....	.....	.....
Dirven in.....	1010	41	614	326	.....	.....
Total.....	18106	2239	64084	34943	134	1709
Tot. Last yr	20629	2574	127220	33247	270	2427

SHIPMENTS

	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P....	512	25	.....	1	.....	17
C. G. W.....	2165	92	4600	6267	38	151
C. M. & St. P...	1444	67	.....	1320	4	57
M. & St. L.....	147	.....	.....	.....	.....	6
C. St. P. M. & O.	875	35	.....	212	.....	39
C. B. & Q.....	3262	16	3806	16694	.....	230
Wis. Cent.....	306	.....	1766	.....	.....	31
M. St. P. & S. S. M	71	.....	.....	1401	20	11
Gt. Nor.....	725	4	17	614	53	26
Nor. Pac.....	177	75	155	1578	12	17
S. Y. Ter.....	.....	.....	.....	.....	.....	.....
Driven out.....	1660	250	183	491	99	.....
Total.....	11344	564	10527	28578	226	585
Total last yr.	12154	820	28009	21753	230	750

SUMMARY TWELVE MONTHS

Receipts			Shipments		
	This Year	Last Year		This Year	Last Year
Cattle.....	418829	400808	Cattle.....	294256	288894
Calves.....	78523	62352	Calves.....	28159	13466
Hogs.....	725420	1133412	Hogs.....	136982	253071
Sheep.....	496062	359343	Sheep.....	347785	241049
Horses.....	5632	7125	Horses.....	5729	6691
Cars.....	28022	30517	Cars.....	13325	13267

stated with no idea of a reflection on Mr. Wickre, for his efforts to assist in making the Northwestern show a success are highly appreciated, but to help illustrate the point we wish to convey. The fact that these cattle were prize winners in South St. Paul and yet unplaced in Chicago goes to show that while good they were far from high class and yet Mr. Wickre was returned a paying profit, in fact, a very handsome profit. And it must not be lost sight of that feed prices were even higher during the period Mr. Wickre was feeding than at present.

Here is the story of his effort in figures:

Feeding 65 days at cost
of, per head..... 15.00

Total cost, per head.....\$53.11
Sold at, per head.....\$82.36

Net profit, per head.....\$29.25

Mr. Wickre followed his cattle with a bunch of sixty hogs and figures that the gain made by these hogs more than balanced the labor in connection with the feeding. And still another item which should never be overlooked, the manure from the cattle, a clear gain and a very valuable gain.

To such men as want to feed stock but are skeptical when feed prices are high, to such men we ask a careful consideration of Mr. Wickre's effort. It shows to a nicety what a man with a little nerve can accomplish and proves beyond question the fallacy of the argument against putting high priced feed into livestock.

Mr. Wickre could have sold his cattle in South St. Paul for as much as he obtained for them in Chicago but preferred to take them to the International. Had they been good enough to get into the money class there, there is no question but that he would have realized a still greater profit on them.

It is hoped that Mr. Wickre's success will prompt others to feed not only for the regular market but to make a special effort to feed for the 1910 Northwestern show for the show is a fixture and will be held again next year and in the years to follow.

The International is a big show now but there was a time when it was no bigger and did not carry any more exhibits than did this year's Northwestern.

The success of the Northwestern depends on the size and number of the exhibits and if the feeders in this section will allow themselves to be convinced that high-priced feed is not a barrier to successful feeding then success is assured.

1910 OFFER

For several years we have been searching for a magazine of national reputation with which we might combine, and in which we might have implicit faith as to its editorial policy and advertising patronage. The Farm Journal, of Philadelphia, Pa., is just such a publication. Its circulation is over 600,000; its class of advertising is beyond criticism. As a general farm paper, it has no superior in the nation. No farmer in North Dakota can afford to disregard our special offer of five years subscription to both the North Dakota Farmer and the Farm Journal, for only \$2.00. Subscribe yourself then pass the word along to your neighbor.

NORTH DAKOTA FARMER FIVE YEARS
FARM JOURNAL FIVE YEARS
BOTH FOR \$2.00

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North Dakota Farmer, Lisbon, N. D.

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BREEDER OF: Black Percheron and Hambletonian Horses, Red Polled Cattle, Poland China Hogs, White P. R. Chickens, White Holland Turkeys, White Embden Geese, White Pekin Ducks and White Guinea Fowls.

GROWER OF: Minnesota No. 169, Spring Wheat, Swedish Select Oats, White Hulless and Success Beardless Barley, Turkey Red Winter Wheat, N. D. 959 Winter Rye, Northwestern Dent Corn, Early Ohio Potatoes, Timothy and Alfalfa.

Young Stock and Pure Seed, for sale. Write me for particulars.

J. A. ENGLUND, Prop.

Kenmare, North Dakota.

THE ENVILLA STOCK FARM

COGSWELL, NORTH DAKOTA

SHETLAND PONIES. All colors, ages and sizes.

REGISTERED ANGUS CATTLE. Most popular families.

HEAVY DRAFT STALLIONS AND MARES. TWO SPANISH JACKS.

WOLF AND FOX HOUNDS that will catch and kill.

PET STOCK OF ALL KINDS.

PURE BRED POULTRY.

We can please you both in Quality and Price

L. H. WHITE, Prop.

COGSWELL, N. D.

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We tan Horse and Cattle Hides. Skins of all fur animals for Robes and Coats. Oak Harness and Lace Leather. Robes are our specialty. No Complaints. Skilled Labor. Twenty-five years' experience. All work guaranteed. Pay highest market price for Hides and Skins. We keep a line of Harness Leather and Robes for sale. We pay the freight on Green Hides for Robes and Leather. Send for price list and shipping tags.

Lisbon, N. D.

OTTO JENSON, Proprietor.

DAIRY NOTES

The last Minnesota legislature appropriated \$5,000 for a period of two years for extension work to be carried on by the dairy division of the state experiment station. The first work undertaken is the organization of cow-testing associations in different creamery localities in the state. An expert dairyman is now in the field organizing these associations and giving instructions for carrying on the work. The general plan is as follows: Each patron supplies himself with a small spring scale and bottles for taking composite samples of the milk from each cow. The experiment station furnishes all necessary blanks and compiles results. The milk from each cow is weighed once a week, samples are taken for the composite test and each cow's feed is estimated. At the end of the month, the composite samples are tested, either at the local creamery or at the station laboratory, division at University Farm. In this way results will be obtained which are sufficiently accurate for all practical purposes, and the patron, who is supplied with a copy of the records, will have learned which cows in his herd are returning him a profit. The only expense to the patron is the cost of scale and bottles.

The quality of hard milking is due to the constriction of the teat, sometimes caused by exposure to cold and sometimes cows are naturally hard milkers—the opening in the end of the teat is too small to permit of easy milking. The opening in the teat is controlled by the sphincter muscle which sometimes becomes permanently contracted and thus makes it difficult to draw the milk. In other cases, this muscle becomes permanently relaxed with the result that the cow leaks her milk.

When ordinary cows become extremely hard milkers we would advise disposing of them as soon as possible, as they are not worth the expense and bother necessary in overcoming this trouble.

The average dairy profits can be increased if the cows are bred to freshen in the fall. At this time the cows and calves can be cared for better and the calves will be healthier; labor is cheaper and easier to secure; milk keeps better and cream and butter are higher in price, and the cows will produce more for the whole year, since during the latter part of the lactation period they go onto green pasture.

GRAND 5-YEAR OFFER, PAGE 20



DE LAVAL
CREAM
SEPARATORS
First—Always Best—Cheapest.
For Thirty Years
The World's Standard
As much better than other separators as other separators are better than gravity creamers.
Send for catalogue of 1910 Latest Improved Machines.
THE DE LAVAL SEPARATOR CO.
160-167 Broadway NEW YORK
172-177 William Street MONTREAL
42 E. Madison Street CHICAGO
14 & 16 Princess Street WINNIPEG
DUNN & BARNARDSON BROS. SAN FRANCISCO
1010 Western Avenue SEATTLE

The usual practice of feeding silage is to give the cows all that they will eat up clean. Overfeeding with silage is more harmful than with most any other kind of feed in that the excess soon spoils, and renders the mangers very filthy.

Cream or butter is not the only profit from a cow. The skim milk and manure are a large share of the profits if they are rightly used. The two combined can be made of more value than the cream.

One advantage in selling cream over that of whole milk is the saving of about one-half in marketing the product.

The great question to all dairymen just now is whether or not Congress will take off the 10-cent oleo tax. It would seem that there are several prominent men in Congress who are ready to take up the fight for the oleo interests. Better write your senator or representative now!

It is a good thing to weigh each cow's milk at least once a week to ascertain how much she is producing. Testing and keeping records of individual cows is a certain means for selection in breeding up for better quality.

OUR AWL OFFER

Not long since the writer saw a street vender selling Meyer's Awls at one dollar each to a crowd of eager farmers. We offer the same awl free for a two years' subscription, or for two new subscriptions. Think of it! See Page 11

GRAND 5-YEAR OFFER, PAGE 20

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J. W. & F. T. PETERSON, Litchfield, Minn.

MEADOWBROOK STOCK FARM. Clydesdales and Shetland Ponies, imported and homebred. Prices reasonable and terms to suit. Write or come and see me. **GEORGE LANG, Mapleton, Minn.**

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Young Stock of Both Sexes For Sale.
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FOR SALE: A fine purebred registered Holstein-Friesian bull one and one half year old, of the famous DeKol and Pietertje families, the best dairy breed in the world.

F. J. STEIDL,

Wheaton, Minn.

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SWINE

POLAND CHINA PIGS, also Shropshire sheep. Seed grain. **GEO. N. SMITH, Amania, N. D.**

MISCELLANEOUS

Envilla Stock Farm, Cogswell, N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf and Fox Hounds Fancy Poultry, Pet Stock and Ferrets.

FOR SALE: Two thoroughbred Spanish Jacks raised in Minnesota. Four registered short horn Bulls. **T. K. TOBIASON, Kempton, N. D.**

FAIRVIEW STOCK FARM. Breeder of Short Horn Cattle, Mammoth Bronze Turkeys and B. P. Rock Chickens. Young Stock for Sale.
F. R. HAMMOND, Prop., Bismarck, N. D.

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All stock full blood and registered.

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Live Stock and Farm Sales

Familiar with Pedigrees. Prices reasonable and satisfaction guaranteed. Correspondence solicited. References given.

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Largest Dealers. In business 26 years. Price list and latest Game Laws free.
BLACK'S HIDE & FUR CO.,
Durand, Wisconsin

Try our Classified Ads. The cost is reasonable.

NORTH DAKOTA FARMER

Poultry Department

Prof. O. W. Dynes, Agricultural College

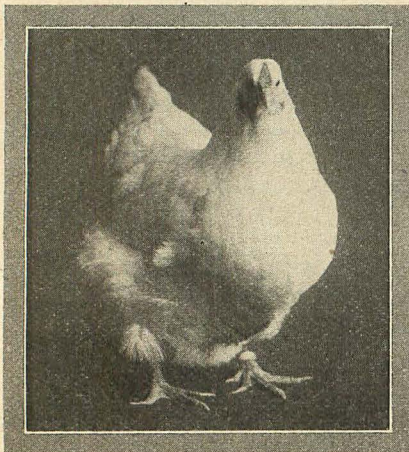
DON'T FORGET

When attending the Grain Growers' Convention don't forget to take in the State Poultry Show. Remember the dates, Jan. 18-21 at Fargo. The largest and best show ever held within the state is promised.

THE PROFITABLE AGE OF FOWLS

Press Bulletin of Oregon Agricultural College, by James Dryden

The question as to which is the most profitable breed of fowls is very frequently asked. There are undoubtedly



White Wyandotte Pullet, bred, owned and exhibited by Hausmann Poultry Farm. She was 1st at Fargo and St. Paul.

differences in breeds, but undue importance should not be placed upon breed. The trap nest has shown that there is more difference in individuals than in breeds. Breed isn't everything. We must get away from that idea in poultry-keeping. If a man starts in the poultry business with "the best breed," as he believes, and has with it the notion that breed is everything, he will meet with inevitable failure. The breed may be all right, but the fowls must be encouraged to do their best by good care and management. When eggs are firm at 40 cents a dozen and the hens fail to respond, the owner is likely to become unreasonable and take up with another breed, and most likely the fault was not in the breed. The fault is usually one of two things; either the hens are of a poor or non-productive strain of the breed, or the management is poor.

It is a point in management that I wish to speak of here, one point in many that must be taken into account if poultry-

keeping is to be made a success. It is a question of the most profitable age of the hen. Poultrymen who have kept in touch with poultry investigations during the past few years are pretty well informed on this point, but the importance of this subject is not yet generally appreciated. The writer carried on for several years at the Utah Experiment Station a line of experiments with the object of determining the value of the hen at different ages for egg production. The same hens were kept year after year under similar conditions and a record kept of production and of food consumed. These experiments proved that the hen is different from the cow, which retains or improves her productivity with age. The first year was the most profitable, and there was a gradual decrease in productiveness each succeeding year. It is safe to figure this decrease at 25 per cent each year. With average prices for food and for eggs it is not profitable to keep hens after they have finished their second year of laying. The first, or pullet year, is very profitable, the second will give a satisfactory profit, but during the third year the egg yield will seldom pay for the food consumed.

These conclusions apply only, of course, where the eggs are sold at market prices. Fowls that have a special value as breeding stock should be kept longer, but the notion that "the old speckled hen" is the good layer should not be cherished unless she is caught in the trap nest. The fact that she sings a joyful lay, paints her comb a brilliant red and scratched a vigorous scratch, should not be accepted as sufficient grounds for commuting sentence.

It is safe to say that the poultry-keepers of this state would be many thousands of dollars in the pocket by rigorously killing off the hens every two years and replacing them with new stock—with the exceptions noted above.

Where the pullets and hens are allowed to run together it will be necessary to mark them, otherwise it will be difficult to separate the old stock from the young when it is desired to market them. The usual method of marking is to punch a hole in the web between the toes when the chicks are hatched. This is easily and quickly done with a punch which may be purchased from the poultry supply houses for 25 cents. A number of different markings may be made in this way. Where the practice is to dispose of the hens every two years it will be sufficient to mark them every other year.

DRESSING POULTRY

One of the much debated questions among poultry dealers and consumers is whether or not birds keep better when marketed drawn, says Poultry Record. Practice varies in different localities. Opening the body and removing the viscera undoubtedly exposes the internal surface to the air, which always contains micro-organisms, and thus invites decomposition; but, on the other hand, it must be remembered that the viscera decompose more rapidly than other parts of the body, and if left in are likely to infect the rest of the bird. Of course in removing them great care and cleanliness should be observed. Washing the inside of a badly drawn bird with salt and water is said to hinder infection. In experiments reported a few years ago properly drawn birds kept sweet two or three days longer than undrawn ones. In the case of undrawn birds the digestive organs contain more or less moist, partly digested material. The liquid in such matter can pass thru the walls of the intestines, etc., and it is thus possible that dissolved bodies of unpleasant flavor can find their way into the adjacent flesh and that the flavor of undrawn poultry which is kept for any considerable time may be injured.

The micro-organisms which produce the undesirable chemical changes in flesh grow more quickly at a moderately high temperature than at a low one, and in a damp place than a dry one. Ordinarily poultry will remain sweet for a week or more in a temperature of 50 degrees Fahrenheit, but if it is to be longer it must be stored in a dry place at a temperature no higher than 34 degrees Fahrenheit. In such "cold storage" it will keep almost indefinitely. Many dealers buy large quantities of poultry when it is most plentiful and keep it over until few fresh birds are available. The ordinary cold storage season for poultry lasts, roughly speaking, from October until May, tho our mid-summer turkeys are proof of its occasional extension. Very young birds and some of the delicate game birds do not stand cold storage well, but others keep in excellent condition. Once taken from the storehouse, however, they decompose much more quickly than fresh birds and in the off season buyers should be on their guard against birds which have been unpacked too long.

THE POULTRY YARD

The lively, busy pullet is now sending joy to the hen plant.

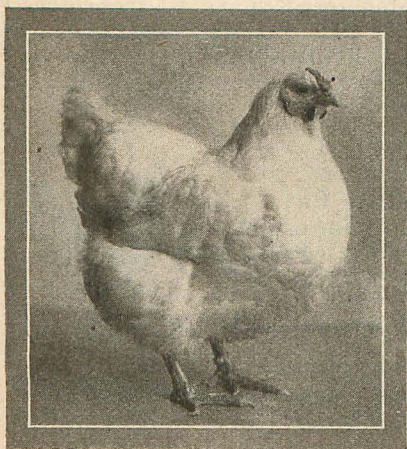
More quality and less quantity is a good motto to start out on.

A little heavier feed as the days grow colder. Corn fills the bill exactly.

Fowls love to thrash out a bundle of wheat or oats, and it does one good to step around to the door of the poultry house and listen to the merry chatter while the fowls are digging in the straw.

Some farmers neglect the twenty-five to fifty cents that the battening of cracks in the coop would cost, and each month feed a dollar's worth of extra corn in order to supply the animal heat needed.

The answer to the question, Does winter poultry pay? depends in a large measure upon where your hens are roosting. If on the bare branches of a tree, on the northeast corner of the barn, there can be no doubt about it.



White - Wyandotte Hen owned by Hausmann Poultry Farm, Hillsboro. This was the highest scoring bird at the Fargo, 1909 show.

There is a disposition to sit around and sleep in winter. Hens will drop into that habit if you do not help them to stir around and work for their living. That is why a scratching shed is good, and why plenty of litter keeps the fowls healthy.

Scatter a little grain among litter at noon, and give a full feed at night. What is meant by a full feed of grain is about a good handful for each fowl in the pen. A mixture of corn, wheat, oats and barley, equal parts by measurement, makes an excellent mixture for winter.

Now when the old year is passed, our thoughts are apt to wander back reviewing the poultry work of the past season. We can all see past mistakes and how we can improve matters next season, and, seeing, we should resolve to do our best, and then keep the resolution.

Fowls must have green food in some form or other for egg production during the winter months. In cooked or scalded clover hay or alfalfa we have good substitutes, and it is wise to mix either one with the morning mash; but, if at all possible, some "real green stuff" should also be given each day.

Sprouted oats are fed by many poultry-men, and to good effect.

It is a noteworthy fact that fowls prefer green food in the morning.

It is a relish to them. It seems to brace them up, and they are more eager for it.—Farm Journal.

TRAPPING THE LAYING HEN

Guy E. Mitchell, Washington, D. C.

Is your hen paying for her keep? Are there drones in your flocks? Many times these questions are propounded to the egg farmer and in most every instance the answer is a blank stare. There is only one way to solve the problem as above presented, and that is by means of the trap nest.

The Main Station in all its experimental work with laying hens makes use of the trap nest. During the past year a new type of trap nest has been devised which is proving extremely satisfactory. The features in which this nest is considered superior to the type formerly used at the station are (1) certainty and precision of operation; (2) greater simplicity of construction, with less tendency to get out of order and work badly; (3) saving of labor in resetting the nest after use.

The nest is a box-like structure, without front, end, or cover, 28 inches long, 13 inches wide, and 16 inches deep, inside measure. A division board extending up 6 inches from the bottom, is placed across the box 12 inches from the rear end and 15 inches from the front end. The rear section is the nest proper.

The front portion of the nest has no fixed bottom. Instead there is a movable bottom or treadle which is hinged at the back end. To this treadle is hinged

BUY THE BEST

Metal Covered

Ironclad

TRADE MARK

INCUBATOR & BROODER

Absolutely fire-proof, weather-proof, rat-proof. Hot water, double walls, double glass doors, copper tanks, self-regulating, high grade lumber. Only Brooder "Ironclad" all over.

For indoor or outdoor use. Sold on "Ironclad" guarantee. Avoid trouble—save time and money. Don't buy—get our catalog first.

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Covered with Galvanized Iron. Metal Legs

BARRED ROCKS

Choice stock and fair treatment.

ROBERT B. REED

Box 2.

Amenia, N. D.

MYERS SEWING AWL

Many of our readers have already taken advantage of our special premium offer found on page 11 of this issue. This offer is liable to be withdrawn at any time. These awls cannot be bought for less than one dollar, and yet this awl is given as a premium for simply one two-year subscription or two one-year subscriptions.

PARTRIDGE WYANDOTTES

Hardi-breds

Birds from the Hadaway flock direct. Blocky, well marked and of trap-nested, aristocratic ancestry. Eggs: \$3 per 15. Cash with order.

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FREE, to Boys and Girls, Flexible Flyer, "The sled that steers." The best sled in the world. You can easily secure one within a few days by doing a little pleasant work. Some have in a few hours. Be the first in your town. Write today, stating your age. A postal card will do. W. I. Davis, 155 East 24th St., New York City.

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White Plymouth Rocks, Canaday's.
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Give us a chance to convince you that we have just what you want.

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BREEDERS OF FANCY POULTRY

Eggs in hatching season. Stock for sale.

Our prices are reasonable and we guarantee satisfaction.

Our shipping facilities are the best in the state of North Dakota.

We don't say anything about our prize winners, but never mind. We have so many ribbons that we can't begin to give you a list of them.

Our birds are all winners and layers.

We have only the best of everything.

Write and tell us what you want. We know that we can supply you. Address,

CASSELTON POULTRY ASSOCIATION,
 Casselton, N. Dak.

Come and see our birds at the Farmers' Institute and Poultry Show at Casselton, N. D., Jan. 31, 1910.

the door of the nest. The treadle is made of one-half-inch pine stuff, with one and one-half-inch hardwood cleats at each end to hold the screws which fasten the hinges. It is 12 inches wide and twelve and one-half inches long. Across its upper face just behind the hinges holding the door is nailed a pine strip 4 inches wide, beveled on both sides; the door of the nest is not made solid, but is an open frame to the inner side of which is fastened a rectangular piece of one-eighth-inch mesh galvanized screening (dimensions 8 x 9 inches). The sides of the door are strips of three-fourths-inch stuff 12 inches long and one and one-half inches wide, halved at the ends to join to the top and bottom of the door. The top of the door is a strip of hardwood 12 inches long and one and one-half inches wide, halved in two and three-fourths inches from each end. The projecting ends of this top strip serve as stops for the door when it closes. The bottom of the door is a hardwood strip ten and one-fourth inches by 4 inches. The side strips are fitted into the ends of this bottom strip in such way as to project slightly (about one-thirty-second inch) above the front surface of that strip, for a reason which will be apparent.

When the nest is open the door extends horizontally in front; in this position the side strips of the door rest on a strip of wood one and one-half inches wide, beveled on the inner corner which extends across the front of the nest. This strip is nailed to the top of a board 4 inches wide, which forms the front of the nest box proper. To the bottom of this is nailed a strip 2 inches wide, into which are set two 4-inch spikes from which the heads have been cut. The treadle rests on these spikes when the nest is closed. The hinges used in fastening the treadle and door easily. It is necessary to use hinges which will not rust.

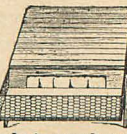
The manner in which the nest operates is readily apparent. A hen about to lay steps up on the door and walks in. When she passes the point where the door is hinged to the treadle her weight on the treadle causes it to drop. This at the same time pulls the door up behind her. It is then impossible for the hen to get out of the nest till the attendant lifts door and treadle and resets it. The nest is extremely simple: it has no locks or triggers to get out of order. Yet by proper balancing of door and treadle it can be so delicately adjusted that a weight of less than half a pound on the treadle will spring the trap. All bearing surfaces are made of beech because of the well-known property of this wood to take on a highly polished surface with wear. The nests in use at the Maine station have the doors of hard wood, in

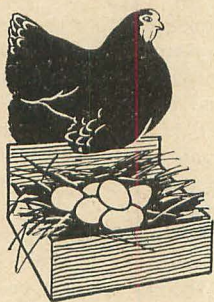


125 Egg Incubator and Brooder Both For \$10

Why pay more than our price? If ordered together we send both machines for \$10.00.—freight paid east of Rockies. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery underneath the egg tray. Both incubator and brooder shipped complete, with thermometers, lamps, egg testers—all ready to use when you receive them. All machines guaranteed. Incubators are finished in natural colors showing the high grade lumber used—no paint to cover inferior material. If you will compare our machines with others offered at anywhere near our price, we will feel sure of your order. Don't buy until you do this—you'll save money. It pays to investigate the "Wisconsin" before you buy. Send for the free catalog today, or send in your order and save time.

WISCONSIN INCUBATOR CO., Box 67, Racine, Wis.





Getting Eggs In Winter

Is Getting Money

Those who get eggs then make money fast. If you don't get them you have missed some point that might not have cost you a cent but would make you dollars if you knew it. We have arranged to furnish our readers the **secrets of the most successful egg producers**, men who make money, and an illustrated description of how it is done on one of

America's Most Profitable Egg Farms


Also a year's subscription to Poultry Herald, an illustrated, monthly paper devoted entirely to "Successful Poultry Keeping." It is always full of practical, seasonable information that poultry keepers need and every issue has Turkey Dept., Ducks and Geese Dept., Question Dept. (where questions are answered free,) Disease Dept., etc. Regular price 50 cents a year

To Help You Make Poultry Pay

We have made arrangements to give you these **secrets**, also Poultry Herald one year and this paper for only a few cents more than the regular price of this paper alone. Don't delay: begin now and get eggs when the price is highest.

Our Offer: N. D. FARMER and Poultry Herald 60c

"GETTING EGGS IN WINTER" absolutely free with this offer.

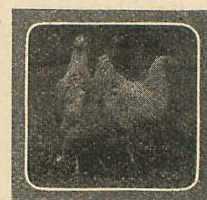


order to get greater durability. For temporary use the nest door can be constructed of soft wood.

These trap nests are not made with covers because they are used in tiers and slide in and out like drawers. They can be carried away for cleaning when necessary. Four nests in a pen accommodate 20 hens by the attendant going thru the pens once an hour, or a little oftener, during that part of the day when the hens are busiest. The hens must all have leg bands in order to identify them. When a hen has laid an egg and desires to leave the nest, she steps out into the front space and remains there until she is released. Were the box not divided into two sections she would be likely to crush her egg by stepping upon it, and thus learn the pernicious habit of egg eating.

To remove a hen, the nest is pulled part way out, and as it has no cover she is readily caught, the number on her leg band is noted and the proper entry made on the record sheet. After having been taken off a few times the hens do not object to being handled, most of them remaining quiet, apparently expecting to be picked up.

The writer has noted by actual experiment, that where trap nests, of a different type than above described (that formerly in use by the Maine Station) are placed beside other nests with no trap, the hens in every instance will visit the



Plymouth Rock Poultry. Line bred from nation's greatest prize winners. Eggs at \$2.00 per setting. A few choice cockerels for sale at \$5.00 each.

H. C. Harty,
Bottineau, N. Dak.

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Make Your Hens Lay More Eggs

I have a method that will make your hens lay every day; it never fails. Write for it,

MRS. B. F. WILCOXON,
Hillsdale, Wyo., Dept. 5

traps. This is readily explained for the hen knows that with the door shut behind her she will not be disturbed by one or perhaps two others crowding in upon her.

CAUSES OF DISEASES OF POULTRY

In order for the poultry raiser to have the correct knowledge of diseases of poultry, their prevention and cure, it is very essential to know something about the causes. The first step necessary in treating a disease is to seek and remove the cause, if possible. In order to do this it becomes necessary to understand something about the agencies which cause disease.

The better way to understand this subject is to classify the different diseases. First, if there is any disorder of the digestive organs, the nature of the food and how given must be looked into, whether the food is wholesome or whether it is the proper ration for the kind of fowls that are fed, as there is a difference as to what the individual is feeding for, whether for eggs, for growing chickens or for fattening. Then, again, it is necessary to see that the fowls are provided with sufficient grit and whether they have sufficient exercise. Where all these are properly provided for, there is very little danger of digestive trouble.

If a flock of poultry show symptoms of some disease of the respiratory organs, the ventilation, whether sufficient, or whether in such a way that the fowls are in a direct draught, whether on the roost or along the floor where they sit during the day, must be looked after; also whether their quarters are not damp and filthy and whether the hen house is properly heated. An overheated hen house is fully as bad to produce diseases of the respiratory organs as it is for fowls to be out and exposed to inclement weather. In those diseases where there is a general outbreak of some infectious nature the general sanitary conditions must be looked after. Often this outbreak can be traced to putting a diseased bird in the flock or carrying infection from diseased birds to the well with the feeding utensils or on the attend-

ant's shoes, or animals, such as dogs, going from one pen to another.

There are indirect and predisposing causes, such as lice, which so debilitate the fowls that they will easily succumb to disease. Allowing fowls to become too fat, either by over-feeding with highly nutritious food or not supplying them with sufficient room to exercise will bring on such trouble

as apoplexy, congestion of the liver, diseases of the egg organs, leg weakness, paresis, etc. Another cause that might be mentioned that produces a constitution that easily succumbs to disease is inbreeding.

Where all these causes are avoided diseases among poultry must certainly be reduced to a minimum.—Successful Poultry Journal.

School and Home

WOMANLY WISDOM

I wish that all your skies be blue,

Your hands filled full of all life's flowers,

Your paths all soft, your friends all true,

Your pleasure sweet in all your hours.

Too much to wish? Perhaps it is,

But could I wish you less than this?

I will wish more—that God will send

Just what His love perceives you need.

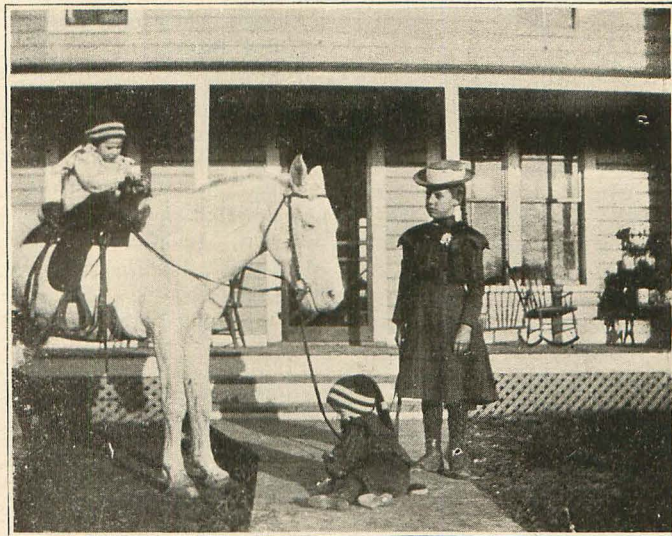
Then be it thorn or flowers, dear friend,

You will thereby be blest indeed.

ber are placed in boiling water, let warm water from the faucet run over them before placing them in the dish.

Never put pork into a barrel that has the slightest smell or taint about it. Wash and scrub it clean, scald it again and again, and if then it is not just right, leave it out where the sun can shine in it a long time. Old Sol is the greatest purifier in the world.

For variety one of these cold mornings, try this: Peel some large potatoes and cut a little piece off one end. With



A gentle, trusty pony is one of the best playmates for the children.

A stitch in times saves a lost button.
If somebody told you it is not a secret.

Live as much as possible on the sunny side of your house.

A job for Burbank—training a Christmas tree to sprout its own presents.

The truest test of love between husband and wife is whether they just like to have each other around.

Fresh pork is fine eating, but be careful that the little folks do not eat too much of it at a time; and maybe you had better take this advice to yourself.

To prevent eggs cracking when a num-

ber are placed in boiling water, let warm water from the faucet run over them before placing them in the dish.

A good way to protect a bed of tender rose-bushes is to bend them carefully down to the ground, hold them in position with stakes, and then cover with leaves, straw or earth. On my own rose bed I follow this plan, using a heavy layer of leaves held in place by a wide strip of wire chicken netting laid flat on the bed and securely staked at the edges.

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CAMERA AND OUTFIT
FOUNTAIN PEN
FOOTBALL
ELECTRIC MOTOR

A BOY CORN GROWER IN NEBRASKA

There is a boy less than 13 years of age in the State of Nebraska who raised 113.8 bushels of corn per acre on his father's farm last year. The boy's name is William A. Wiese and he lives at West Point. He entered the corn contest for the boys which was held under the direction of the Nebraska State Board of Agriculture. One of the conditions of this contest was that the boys should do all the work themselves in connection with growing the crop. This included preparation of the soil, fertilization, cultivation, harvesting, etc.

In his letter to the secretary of the Board of Agriculture describing the work of growing the crop he writes as follows: "I joined your contest for the greatest yield of corn per acre for the season of 1909, and I have to report as follows:

"The piece of ground planted to corn by me is 5 1-3 rods wide, and 30 rods long and is situated on my father's farm, two miles southeast of West Point. The soil is a rich black loam, mixed a little with black sand, and was for several years a hog pasture; seven years ago my father plowed up this ground and planted it to corn. In the year 1903 the ground was sowed to wheat, clover and timothy, and it was used for hay land up to and including the year 1908. On March 12, 1909, the ground received a fair coat of hog and chicken manure, well rotted; on March 20, 1909, the ground was plowed about four inches deep; on March 22, 1909, the ground was disced twice; on the same day, March 22, the ground was harrowed twice; on May 7, 1909, the ground was again disced twice, and also received harrowing twice on the same day; on May 8, 1909, the corn was planted in drilled rows three feet and four inches apart; stalks stood from 5 to 8 inches apart and at places two stalks stood together; on May 13, 1909, the ground was again harrowed twice.

"The corn was first cultivated on June 1, 1909; the second time on June 9, the third time June 18, and the fourth and last time July 1. I also at times hoed and weeded the corn as much as possible. The corn was husked, piled, measured and crop weighed on October 23 in the presence of Jacob Clausen and Mr. Fred Wessel, and yielded 7,968 pounds."

The Board of Agriculture offered \$150 in cash which was divided into 11 prizes. The 11 highest acre yields were as follows: First, 113.8; second, 93.2; third, 85.2; fourth, 79.8; fifth, 79.9; sixth, 77; seventh, 76.4; eighth, 75.4; ninth, 70.6; tenth, 72; eleventh, 65.5 bushels per acre. These

are all excellent yields, and show what can be done, even by boys, by thorough cultivation and fertilization of the land and careful seed selection. They should inspire other boys to do likewise; they should teach the farmers who are apparently content with yields varying from 15 to 40 bushels per acre that if it is possible for a boy to produce 114 bushels on an acre, improved methods of corn culture thruout the country ought surely to raise the average yield from 30 bushels to 40 bushels per acre. Such an increase in yield would mean an increase of over one billion bushels

of corn a year in the United States, having a value of 500 million dollars.

The average farmer is raising too many acres of corn to obtain a good yield. It were better if he would reduce his acreage 25 per cent and increase the yield up to an average of 40 bushels per acre. The income from his corn would be larger than it is today, while the reduced corn acreage would enable him to grow more grass and clover and thus help build up his farm to a higher state of fertility.

—Farmers' Tribune.

Shade Trees and Gardens.

C. B. Waldron, N. D. A. C., Editor.

STRAWBERRY CULTURE

The efforts at strawberry culture in different parts of the state have, been sufficient to demonstrate that this fruit can be grown with reasonable success wherever the conditions are made suitable. The prime requisites are:

First: The right varieties.

Second: The proper kind of soil.

Third: Protection.

Fourth: Correct methods of culture.

In many localities the matter of variety is not of the first importance since there are many varieties that with good conditions are about equally profitable. Our own circumstances are somewhat different. In order to succeed we need a plant that will withstand heat, cold and occasional drouth. This means a plant with a strong healthy foliage, and big vigorous root system in addition to the essential quality of hardiness.

The Senator Dunlap strawberry seems to meet these requirements better than any other that we have so far tried. In some localities strawberries succeed well on rather light soil. This is where the rainfall is abundant, or where water can be supplied artificially. In regions having no greater rainfall than North Dakota we select the soil that is the most retentive of moisture. This is ordinarily a good strong clay loam. It must be borne in mind, however, that soils which are too heavy will bake and pack and thus dry out sooner than soils which contain a considerable amount of sand. The strawberry is likely to be injured by hot dry winds, and for this reason we provide if possible a shelter of trees upon the south and west. It takes but three or four years to grow a pretty good wind break of Russian willows, and in the meantime rows of sunflower can be made to assist. The strawberry bed should also have some shelter at the north to

prevent snow from blowing during the winter time.

Where the rainfall is very abundant it is possible to grow the plants close together, thus obtaining a large yield. That method is not a safe one in North Dakota. Varieties like the Senator Dunlap, which make a large number of plants, must be greatly restricted in their growth cutting off all but three or four runners during the first season after planting. It is our custom to set the plants two by four feet apart. This causes ample room for cultivation, and allows each plant sufficient moisture to develop to the fullest extent.

We have found that the plants set early in the spring produce a much larger crop the following season than those which are set late. For this reason we would recommend setting the plants about the middle of May, keeping them well cultivated thruout the season, allowing no more than eight plants to form to the yard of the row. These should be kept pretty well confined to the row, which should not be allowed to attain more than one foot in width.

It is impossible to grow strawberries successfully in North Dakota without winter protection. In most regions this protection is not applied until after the ground is frozen hard. In as much as the first frost in this country is likely to be very severe we consider it a good plan to put on a light mulch about the first of November, before the ground begins to freeze. This may consist of fresh stable manure scattered lightly over the whole bed, using a manure spreader if possible. This should not be applied so heavily as to smother the plants. The object of this is to lessen the possible damage arising from sudden severe cold.

After about two weeks another light covering can be added, and by the first

of December the third one, so that the mulching finally is about two inches thick. The last covering can be of old straw. Aside from the protection which this mulching affords during the winter it takes the place of cultivation the following season. In fact, it is so much better than cultivation would be that we would not think of trying to grow strawberries by any other method. The mulching is allowed to remain upon the bed a second season. It is removed to some extent from the plants themselves, tho it should be left an inch thick immediately over the plants. They will readily grow thru this mulch in the spring, and the protection which it affords immediately about the roots prevents injury from hot dry weather.

The strawberry bed will need practically no attention aside from partially removing the mulch from the plants, until after the picking season is over. It may then be put in shape for second cropping by severely thinning out the plants, burning off the old mulch and thoroly cultivating the ground. At the close of the season the mulch should be applied as before.

It is not profitable to grow more than two crops of berries in the same bed. One should set out a new bed from the young plants which grow in the first year on the old bed. The secret of successful strawberry growing is to prevent their crowding by the plants themselves; to afford protection at the right time; and above all, to keep the soil mellow and moist by cultivation and by mulching.

THE DEATH OF A POTATO

C. L. Fitch, Potato Specialist, Colorado
A. C., Fort Collins

The Early Ohio potato is easily the most widely grown variety in the United States, being of excellent table quality and adapted to various soils both north and south.

At the present writing, so far as the plains region is concerned, the extinction of this variety seems to be a matter of only a season or two. "Internal brown rot" or "the stem end disease," is reported from Idaho, Montana, Wyoming, and South Dakota to Nebraska and eastern Colorado, as affecting this variety only.

Dr. E. M. Willcox, of the Nebraska station, and his four assistants have spent most of their time for six months or more on this disease, approaching the problem from every conceivable way, but have not determined the cause, much less found a cure.

A Nebraska potato region that has shipped as many as 1,400 cars of Ohio's in a single year, finds its present market nearly destroyed by this

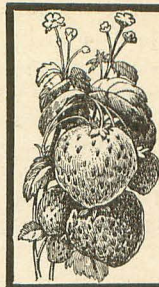
disease and other causes. During the writer's recent institute trip in Nebraska, he saw 6,000 bushels of Ohio's that one merchant had taken on store bills, and for which he had not found an outlet as yet.

The stem end disease shows, first, as a slight discoloration seen on cutting off the stem end of the tuber. Later brown decomposition extends thru the inner structure until all parts within the cortical are spotted with rusty brown. At one place where we held a potato show, half the fancy Ohio's shown were affected, and the best lot, after cooking, gave off, when run thru the ricer, a dark liquid and a fetid odor, altho not visibly affected with the trouble. At another place, a fancy lot of Ohio's was thrown out of competition as commercially worthless, because the first ten potatoes cut open were all far gone with brown rot. Nothing kills trade in potatoes for a variety or a region more quickly than to find that the outside appearance gives the lie to the inside quality. For this and other reasons, 250 cars of Early Ohio potatoes stood unsold on track in Omaha and Kansas City at one time the past fall.

There appear to be two ways of escape for growers of Ohio potatoes: First, good farming, rotation, cultivation, storage—that at Greeley have successfully resisted the gradually increasing vigor of this disease elsewhere; but he who knows the western farmer is aware that it will be many years before farm practice generally can approach that of our best regions in Colorado. The second way out is by disease resistant varieties. Thanks to Prof. Bennett's work, I was able to recommend for conservative trial the new and better early variety, the Irish Cobbler, whose introduction from Maine promises to be worth, to our own state, all our potato appropriations to date. For their own use many people on the Plains raise Blue Victor, a variety so

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Everybody likes strawberries and to prove that our "BLIZZARD BELT" plants are the strongest rooted and heaviest fruiters, we offer to send ONE DOZEN selected plants to you FREE OF CHARGE. We picked 35 quarts of fine fruit from a test bed of but a dozen strawberry plants set the year before. You can do as well. If you care to send 10 cents for mailing expense, we will add 6 BABY EVERGREENS 2 years old and send all to you at proper planting time. Write to-day and we will enter your name for the plants and send you our CATALOGUE and BARGAIN SHEETS of HARDY "BLIZZARD BELT" fruits by next mail. Address
THE GARDNER NURSERY COMPANY, Box 238 Osage, Iowa.



far absolutely immune to the disease, and also absolutely unsalable because of its color. I was able to show the Nebraska growers that these purple potatoes had white bud variations that would enable them to change the variety to a white, salable one, without expense and with sure local adaptability.

The conditions, most critical in Nebraska and eastern Colorado, illustrate two points; the usefulness of disease resistant plants, and the efficiency of good rotation, fertility, and tilth, like enlightened home management for a human family, to ward off and to pass by diseases that come to other homes and fields.

PURE SEED AND NURSERY STOCK

The Ohio Experiment Station believes that it is a good plan for farmer to learn something of a man's reputation thru his neighbors before buying trees of

Kubanka No. 5639 Duram Seed Wheat For Sale

Original seed from Prof. Shepard. Grown on new land. \$1.30 per bushel. Ten bushel lots or more \$1.20, cleaned. Sacks, 20 cents.

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him. Then if possible go early in the season and examine his trees. If an order is given specify that the trees must be of his own growing and that there be no substituting. If ordering from a distant firm select those who advertise in first-class periodicals and specify as before, no substituting. Reputable nurserymen and seedsmen try to keep their stock pure and the varieties true to

name, but they often buy of others and mistakes may occur in handling. If nurserymen and seedsmen are to be censured more than other business men for lax methods, says the Director of the Ohio Station, it is because they get stock from doubtful sources, by exchange or purchase and because they so often substitute a variety which is "just as good."

but were held to represent as fairly as might be these three conditions of manurial usage. These resulted as follows:

Direct hauling to the field and top dressing; 12.8 per cent of the seeds fed germinated within sixty days in sterile soil.

Direct hauling of feces to the field and plowing under; 2.3 per cent of the seeds fed germinated within sixty days in sterile soil.

Direct hauling of the feces to the field and spreading at random as if dropped at pasture; 3.1 per cent of the seeds fed germinated within sixty days in sterile soil.

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FROM THE NATION'S CAPITOL

By GUY E. MITCHELL

WEED SEEDS IN FEED

Under an act of Congress the Department of Agriculture is authorized to examine commercial feeds and grass seed and publish the names of dealers who sell adulterated seeds. A number of experiment stations have gone the Department one better, more especially the Vermont Station which has purchased commercial feeding stuffs, fed them to cattle and other livestock and then by planting the feces shown how dangerous it is for the farmer to throw the manure broadcast over the farm and produce the following year an abundant crop of weeds.

During the early part of one experiment a Jersey cow received a grain ration; later the cow was fed a feed purchased in the open market in southern Vermont, labeled "Ground Flax Flakes" and guaranteed to contain protein 17.34 and fat 17.37. One lot of six samples representing each day's voidings was submitted to microscopical survey and at the same time six other samples were planted in as many boxes of sterilized soil, placed under a greenhouse bench and watered daily. A check unplanted box was similarly handled. Six weeks later the check box showed no growth as did the boxes representing voidings when grain alone was fed. The boxes representing the voidings when the flax flakes were fed, produced five dandelion plants, 3 pigweed; 2 pigeon grass, 3 five-finger and 3 miscellaneous weeds. In the laboratory, however, seeds of 36 different varieties of grasses and weeds were found.

The germination tests were continued for three weeks, at the conclusion of which many of the seeds of lambs' quarters, foxtail and some other species remained hard, indicating a likelihood of their ability to germinate in time; but molds had overgrown the material to such an extent that it was deemed best to discontinue the trial.

Weed seeds sorted from this feed were placed rather more than half-way down in a 100-ton silo full of mature silage when it was filled in the fall. These were taken out three months later, planted and many of them germinated.

A lot of seeds sorted from a molasses feed sown in a flat showed no germination for many months, and then suddenly and for no appreciable reason a vigorous and characteristic weed seed growth occurred.

At the Maryland station representative lots of weed seeds were placed in the midst of piles of horse and of cow manure which reached 201 and 168 degrees F. After two months had elapsed the seeds were withdrawn and planted, but no growth ensued. They could be easily crushed between the fingers, indicating that they had rotted and that their vitality was destroyed. This shows conclusively, the wisdom of using only well-rotted manure as a fertilizer.

On the other hand an experiment by the Vermont station showed the folly of planting fresh manure. The feces of calves fed considerable numbers of diverse weed seeds were used as a top dressing; were spread directly from the stable being plowed under; and were dropped at random as at pasture. The conditions of these trials were artificial

TO SEEK CAUSE OF HIGH LIVING

Secretary Wilson of the Department of Agriculture, who never fails to have a clear comprehension of what is in the public mind, has set out on a line of inquiry which will be watched everywhere with the keenest attention. In his annual report he gave the results of an inquiry into beef prices and set forth that investigations in fifty cities showed that on the average the gross profit of the retailer of beef was 38 per cent. So interesting were the results of this inquiry into beef prices, that Secretary Wilson proposes now to extend it over the whole range of ordinary food products which are familiar and requisite to the table of the average citizen.

Secretary Wilson has begun this inquiry, it is stated, because he does not believe that the farmers of the country are receiving higher prices than they should get for their products, as had been stated by many so-called authorities who wished to explain the higher cost of living. It is understood that he believes the middlemen are responsible for the higher prices.

There are about 19,000,000 families in the country who are directly affected by the prices that have to be paid for food stuffs. It can easily be perceived that Secretary Wilson's report on his inquiries will be much in demand in every community. The investigation ought to shed a flood of light on the mooted problem of the increased cost of living.

A NEW ROAD SURFACING MATERIAL

Consul Ralph C. Busser at Erfurt, Germany, reports to the Department of Commerce and Labor on a new compound called "apokonin" for allaying dust and improving the surface of roads, which has lately been tested in that country.

Various combinations of oil and salt have been used in Germany to sprinkle the streets and roads, but as the effect was only temporary, this method was not considered a solution of the problem

of maintaining hard, clean and sanitary highways. Later coal tar and other preparations were used and altho recognized as an improvement, the expense connected with the employment of these, has stood as an objection to their general use and experiments were continued for the purpose of producing a more ideal and cheaper composition for treating roads.

One of the results of these recent experiments is the preparation of the substance above mentioned, "spokonin"—which has been pronounced by technical observers as the best and most lasting road covering yet brought out. The process is secret, but it is known that coal-tar oils are the main ingredients. The heavy, penetrating qualities of the oils give great binding power to the composition. This, together with the pressure applied, produces a formation iron-like in its consistency, making the surface of the road, it is claimed, so smooth and hard that snow and rain water can not penetrate. It is also claimed that the creosote present in the coal tars, together with the high temperature of the composition when applied, combine to destroy all the bacteria in the dirt, thus preventing the spread of disease from particles that may be ground and blown off the surface.

The State College of Massachusetts is to extend its instruction by an expedition over trolley lines. There will be a section of the college on wheels, carrying its instructions thruout the country before the spring activity begins. This is a result of cooperation between the railways and the Springfield Board of Trade. The farmers show great interest in this public-spirited venture. The railway company will furnish the advertising and assist in other ways. This is prompted by enlightened selfishness. The more the country districts prosper, the better it is for the cities to whose markets they contribute and for the transportation lines.

MORE FARMERS NEEDED

Along the line of his proposed inquiry into the difference between wholesale and retail prices of various foods, Secretary Wilson believes that the country needs more farming.

"Too many people are engaged in the business of distribution," he said. "What we need is more farming. Too many people are rushing to the town and the city and trying to make a living there, and not enough are staying in the country. Too many people are trying to get along without work and not enough of them are in the business of producing something.

"One man could do the business of distribution, where twenty are now engaged in it. That is the reason why the

cost of living is high and people are complaining. People must learn they can't get along without work, and the best place for them is on the farm, where they can raise something. I propose to go into this inquiry thoroly. I notice some are already complaining that my figures on beef prices are not correct. If anybody feels that way, all he's got to do is to go to the bottom of the matter and put forth convincing proof to the contrary."

JAPANESE CHERRY TREES FOR WASHINGTON

In three special cars, accompanied by a special agent, 2000 Japanese cherry trees are being brought across the continent from Seattle to Washington, a gift from the city of Tokyo, Japan, to the National Capital. Everyone of the 2000 trees has been as carefully selected as if it were to be placed in the imperial

gardens of the Emperor of Japan. No part of the empire has been left unsearched for the best of the varieties of cherry trees that grow in Japan. It is understood that these trees when they arrive, will be planted in Potomac park which borders on the Potomac river in the vicinity noted for the famous Long Bridge of Civil War days. If lined in two rows, the trees will reach a distance of three miles, planted 20 feet apart.

When these trees bloom next April the scene will be similar to that of the famous Mukojima of Tokyo, where one mile of these beautiful trees bloom every spring and on which occasion the people declare a holiday and promenade under the arch of pink flowers.

It is understood that Mrs. Taft was largely responsible for the gift being made. When she expressed a desire to purchase some of the Japanese cherry trees and present them to the city of Washington, her wish reached the ears of several prominent Japanese in Washington and New York. The result was that a day or two later Japanese consular officials in New York asked permission, in behalf of the mayor of Tokyo to make a gift of the trees to the United States. There was no difficulty encountered, and in August last, at a meeting of the board, of councilors of the corporation of Tokyo a resolution was passed to present the 2,000 trees to this government.

Near Musactine, Iowa, the government has established a station for the propagation of fresh-water mussel clams. Among the scientists detailed for the work is Walton Clark, who hails from Indiana. He is a man of varied experiences and he tells a lot of interesting stories of them. Some time ago he was out at Plymouth, Indiana, conducting

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some governmental investigations, when he was approached by some citizens and asked how to get rid of "toadstools" which infested the town.

"Where are they," he asked. "Show them to me." They did.

"Great Scott! he exclaimed. "Get me a basket." Then he proceeded to gather up the alleged pests and have a mess cooked. They were the finest kind of mushrooms, and for weeks a big share of the population dined on them.

BEAN ANTHRACNOSE INVESTIGATIONS

For more than three years the Cornell Experiment Station has been devoting considerable time to observations and experiments on the anthracnose or pod-spot of beans. Bean Anthracnose is known to growers under a number of different names, depending largely upon the locality. Perhaps the most common one applied to this malady is "rust." However, as a matter of fact the disease is not rust at all, tho the spots do have a reddish yellow color in their early stages. There is a true rust of beans which is rarely met with in ordinary bean fields. Pod-spot is a name which is frequently applied to the disease, as it appears in the pods. Blight is also commonly used, but incorrectly so, as there is a true bacterial blight of beans, which is not only very common, but frequently quite destructive. Whatever name may be locally given to the anthracnose, it is still one and the same disease that most bean growers have in mind. The disease is readily recognized by the appearance which it gives to the infected pods, and it is here that the trouble is usually first recognized.

The disease is caused by a fungus which lives as a parasite in the tissues of the bean. This fungus is a plant, as much as the bean on which it lives. It works its way into the tissue of the bean to obtain food for its growth and development and it produces spores that serve the purpose of seeds by which it spreads to healthy beans and so reproduces itself.

So far the experiments of the Cornell Station have shown that there are three or four possible means of combatting the disease.

First. Seed Treatment. This is of doubtful value and can not be recommended, at least not from investigations yet made, when there is taken into consideration the loss of seed resulting from such treatment as "The mycelium of the fungus is imbedded in the bean itself and any poison that will penetrate sufficiently to kill the fungus will usually kill the seed." At present the grower can not afford to spend time and money along this line.

Second. Spraying. Spraying with Bordeaux mixture it is found is un-

profitable. The difficulty in the field seems to be that the machinery as used at present, does not effectively cover the parts of the bean plant that must be covered with the poison. If the disease is to be controlled, not only the upper surfaces of the leaves, but the stems and pods must be coated with the Bordeaux.

Third. Clean Seed. Clean seed will grow clean beans. It is on this proposition that most of the work of the Cornell Station is based. When the officials found that neither the sorting of the seed, nor the spraying of the fields proved effective in practice, they turned their attention to the matter of clean seed. From a very careful study of the fungus that caused the disease, it appears conclusive that the fungus is carried over from one season to the next, largely, if not entirely in the seed. If then, it is pointed out, some method can be found by which perfectly clean seed can be obtained, the problem will be solved.

In the spring of 1904, a variety of Black Wax beans were brought from Indiana and planted in a garden where no beans had been grown for many years. These beans gave a crop perfectly free from the anthracnose and this was more remarkable, since practically all the beans grown in the neighborhood were badly spotted that season. The following year seed saved from this crop was planted in a garden where, the previous season, beans had been badly affected with the pod spot. Again they gave a crop perfectly free from the anthracnose, while the same variety grown from seed purchased in the city market gave a diseased crop. In 1906 another planting was made alongside of one from seed of the same variety purchased in open market. Shortly after the beans were up the disease became quite virulent in the plants grown from the purchased seed, while none was to be found in that grown from selected seed of the previous season. All of the plants were thoroly sprayed once, but the disease had at that time made such progress that it was not controlled and a gradual spreading of the disease was observed in the row on adjoining plants from clean seed. This clearly indicated that the absence of the disease the two

preceding years had not been due to varietal resistance. It could be explained only on the basis that there had been no disease in the seed.

In 1907 seed from the western part of the United States—in the irrigated section—was planted on an isolated plot of land on the University Farm. At the same time on another plot of land one-quarter of a mile away, seed from the open market was planted. The seed from the irrigated lands gave a crop entirely free from the anthracnose. The seed planted in the plot a quarter of a mile away gave a crop that was very generally affected with the anthracnose. The experiments indicated—first, that the disease is carried over entirely in the seed; second, that the disease is not ordinarily carried for any considerable distance by natural agents, such as rain, wind, etc., and third, that if perfectly clean seed is planted and ordinary precaution taken to prevent the introduction of the disease on tools, or by workmen, a perfectly clean crop can be produced, even in seasons the most favorable to the development of the fungus.

Considering the manner in which the fungus finds its way into the seed, it seems evident that if no spots are to be found on the pods, none of the seed within will be diseased. That is to say, healthy pods contain healthy seed. The selections should be made at the time when the pods begin to shrivel but before they have become perfectly dry. It has been found that hand picking and sorting of these pods is not nearly so difficult a problem as one might expect. The anthracnose cankers are so large and readily recognized, that with a little coaching any person of ordinary intelligence and care may be depended upon to sort out the healthy pods. It is necessary, however, to examine both sides of every pod.

Little relief can be promised from the development of resistant types, since even if they are obtained, there will probably be no satisfactory varieties that can at once be substituted for those now generally recognized as most favorable for certain purposes. There would probably be required at best, years of selection to bring them to a condition where they would be of general value.

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